

JPRS-UMA-89-024
12 OCTOBER 1989



**FOREIGN
BROADCAST
INFORMATION
SERVICE**

JPRS Report

Soviet Union

Military Affairs

19980126 181

DTIC QUALITY INSPECTED 2

DISTRIBUTION STATEMENT A

**Approved for public release;
Distribution Unlimited**

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL INFORMATION SERVICE
SPRINGFIELD, VA. 22161

Soviet Union

Military Affairs

JPRS-UMA-89-024

CONTENTS

12 October 1989

MILITARY-POLITICAL ISSUES

Biographies of Military Peoples' Deputies [KOMMUNIST VOORUZHENNYKH SIL No 10, May 89] ..	1
Col Gen Morozov on Congress' Response to Military Housing, Other Problems [I. Morozov; KRASNAYA ZVEZDA, 2 Sep 89]	13
Col Gen Pyankov Notes Hardships of Retired Servicemen [B. Pyankov; KRASNAYA ZVEZDA, 14 Sep 89]	15

MILITARY SCIENCE

Readers Respond to Arbatov Article on Restructuring Armed Forces [INTERNATIONAL AFFAIRS No 8, Aug 89]	17
Qualitative Parameters: Reforming Pre-Draft Training [V. Belousov; KRASNAYA ZVEZDA, 14 Sep 89]	23
Qualitative Parameters: Maneuver Defense [I. Vorobyev; KRASNAYA ZVEZDA, 26 Sep 89]	25

AIR FORCE, AIR DEFENSE FORCES

Development of Mi-24 Design [A. Radin; KRYLYA RODINY No 5, May 89]	27
Specifications, Performance of Su-27 [M.P. Simonov; KRYLYA RODINY No 8, Aug 89]	30
Plan For Aviation Fuel Supply Plagued By Irrationalities [V. Shurygin; KRASNAYA ZVEZDA, 13 Sept 89]	33
Warrant Officers Replace Officer as On-Board Flight Engineers [V. Fefelov; KRASNAYA ZVEZDA, 22 Sep 89]	35

STRATEGIC ROCKET FORCES

95-Percent Reduction in Soviet Nuclear Forces Proposed [R. Bogdanov and A. Kortunov; INTERNATIONAL AFFAIRS No 8, Aug 89]	37
---	----

FOREIGN MILITARY AFFAIRS

Ministry Of Defense Expresses Concern Over NATO Exercises [KRASNAYA ZVEZDA, 13 Sep 89]	45
--	----

Biographies of Military Peoples' Deputies

18010879 Moscow KOMMUNIST
VOORUZHENNYKH SIL in Russian
No 10, May 89 pp 3-29

[Unattributed report: "Endowed with Trust—Biographies of USSR Peoples' Deputies from the USSR Armed Forces"; first three paragraphs are KOMMUNIST VOORUZHENNYKH SIL introduction. Each biography is accompanied by a photograph in the original source.]

[Text] The last elections for USSR peoples' deputies have become an important phase in the political reform taking place in the country. They demonstrated that the Soviet people stand for perestroika, for renewal of our society. That is their major political significance.

The right to the deputy's mandate in the open pre-election struggle was won by people who are able to think on a broad scale and act in an innovative manner. They include 79 representatives from the Soviet Army and Navy. Elected as USSR peoples' deputies in the 26 March 1989 elections were two marshals of the Soviet Union; 3 marshals of aviation; 43 generals and admirals; 28 officers, including 7 junior officers; one senior sergeant; and two Soviet Army civilians. The broad range of positions held—from deputy USSR minister of defense to military school cadet—is yet another indication of the democratism of today's elections, the outcome of which was determined by the personal qualities of the persons, not by rank or position.

This issue of the journal acquaints the readers with the biographies of all the service personnel in whom the people have placed their complete trust. This list may be augmented by the names of several persons after repeat elections are held in a number of districts. We will pass on this information at a later date.

Anatoliy Vasilyevich Akentyev

Colonel. Chief of winter sports branch of the TsSKA [Army Central Sports Club]. Born in 1942. Russian. CPSU member since 1975. In military service since 1961. Graduate of the Higher School for Trainers, Military Faculty, State Institute of Physical Culture imeni P. F. Lesgaft. Master of sport, international class; distinguished trainer of the RSFSR. Vice-president, International Federation of Sports Skiing. Awarded Badge of Honor, medals.

Elected from social sports organizations of the USSR.

Viktor Imantovich Alksnis

Lieutenant colonel. Senior engineer-inspector, Air Forces, Baltic Military District. Born in 1950. Latvian. CPSU member since 1974. In military service since 1968. Graduate of the Riga Higher Military Aviation Engineering School imeni Ya. Alksnis. Served as engineer, senior engineer specializing in repair of electronic equipment. Holder of medals.

Elected from the Yuglskiy National Territorial District No 294, Latvian SSR.

Ruslan Sultanovich Aushev

Lieutenant colonel. Commander of motorized rifle regiment. Born in 1954. Ingush. CPSU member since 1977. In military service since 1971. Graduate of the Ordzhonikidze Higher Combined Arms Command School, the Military Academy imeni M. V. Frunze. Commanded a platoon, company; served as executive officer, then commander of a battalion; appointed regimental chief of staff. Delegate to the 19th All-Union Party Conference. Fulfilled his internationalist duty in the Republic of Afghanistan. Hero of the Soviet Union. Awarded Order of Lenin, Order of the Red Star, medals.

Elected from Ussuri Territorial District No 102, Maritime Kray, RSFSR.

Sergey Fedorovich Akhromeyev

Marshal of the Soviet Union. Adviser to the Presidium chairman, USSR Supreme Soviet. Inspector general, Inspectors-General Group, USSR Ministry of Defense. Born in 1923. Russian. CPSU member since 1943. In military service since 1940. Graduate of the Astrakhan Infantry School; Higher Officer Self-Propelled Artillery School; Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy; Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War commanded a platoon, served as battalion senior adjutant, battalion commander. After the war served in more responsible command and staff positions; appointed first deputy chief, then chief of General Staff of USSR Armed Forces and first deputy minister, USSR Ministry of Defense. Elected delegate to the 24th, 26th, 27th CPSU party congresses; 19th All-Union Party Conference. Member of CPSU Central Committee. Deputy, USSR Supreme Soviet, 10th and 11th sessions. Hero of the Soviet Union. Awarded the orders of: Lenin (four times), October Revolution, Patriotic War 1st Class, Red Star (twice), For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Beltsy Territorial District No 697, Moldavian SSR.

Oleg Aleksandrovich Bochkov

Major. Unit executive officer. Born in 1959. Russian. CPSU member since 1979. In military service since 1976. Graduate of a higher military command school. Served as crew chief, section chief. Holder of medals.

Elected from Maloyaroslavets Territorial District No 186, Kaluga Oblast, RSFSR.

Valentin Ivanovich Varennikov

Army general. Commander, Ground Forces, and deputy USSR minister of defense. Born in 1923. Russian. CPSU member since 1944. In military service since 1941.

Graduate of the Cherkassy Infantry School; Military Academy imeni M. V. Frunze; Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War commanded a platoon, mortar battery, artillery regiment. After the war served as deputy commander, then commander of a regiment. Subsequently occupied more responsible command and staff positions. Served four years as head of the Command Group of the USSR Ministry of Defense in the Republic of Afghanistan. Appointed first deputy chief, General Staff, USSR Armed Forces. Candidate for membership in the CPSU Central Committee. Elected delegate to the 25th, 26th, and 27th CPSU congresses, and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 9th and 10th sessions. Hero of the Soviet Union. Awarded the orders: Lenin (twice); October Revolution; Red Banner (four times); Kutuzov 1st Class; Patriotic War 2nd Class (twice); Red Star; For Service to the Motherland in the USSR Armed Forces, 3rd Class; and medals.

Elected from Maloderbetovskiy National Territorial District No 552, Kalmyk ASSR.

Eduard Arkadyevich Vorobyev

Colonel general. Commander, Central Group of Forces. Born in 1938. Russian. CPSU member since 1961. In military service since 1957. Graduate of the Baku Higher Combined Arms Command School imeni Supreme Soviet of the Azerbaijan SSR; Military Academy imeni M. V. Frunze; Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader; company commander; chief of staff, deputy commander, commander of regiment. Subsequently occupied more responsible command positions; appointed first deputy commander, Turkestan Military District. Elected delegate to the 27th CPSU Congress and the 19th All-Union Party Conference. Awarded the order For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes, and medals.

Elected from Uzhgorod Territorial District No 451, Transcarpathian Oblast, Ukrainian SSR.

Vladimir Leonidovich Govorov

Army general. Chief of USSR civil defense and deputy USSR minister of defense. Born in 1924. Russian. CPSU member since 1946. In military service since 1942. Graduate of the Ryazan Artillery School, Military Academy imeni M. V. Frunze, and Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War commanded a platoon, later a battery. After the war served as regimental commander, division commander. Subsequently occupied more responsible command and staff positions. Became commander, Baltic and Moscow military districts; appointed deputy USSR minister of defense and chief inspector of USSR Ministry of Defense. Member of CPSU Central Committee. Elected delegate to the 23rd, 24th, 25th, 26th, and 27th CPSU congresses

and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 8th through 11th sessions. Hero of the Soviet Union. Awarded the orders: Lenin (twice), Red Banner (twice), Patriotic War 1st and 2nd classes, Red Star (twice), For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Groznenskiy Agricultural National Territorial District No 672, Chechen-Ingush ASSR.

Vasiliy Yefimovich Golovnev

Soviet Army civilian. Military unit technician. Born in 1954. Belorussian. CPSU member since 1977. Graduate of the Belorussian Institute of Mechanization of Agriculture. Worked as chief engineer of a kolkhoz, a sovkhoz, then as director of a breeding sovkhoz. Since 1986 working in a military unit.

Elected from Krichev National Territorial District No 96, Belorussian SSR.

Aleksandr Nikolayevich Gonchar

Major. Party committee secretary in a motorized rifle regiment. Born in 1958. Russian. CPSU member since 1978. In military service since 1975. Graduate of the Leningrad Higher Combined Arms Command School imeni S. M. Kirov. Served as motorized rifle platoon leader. Elected committee secretary of regimental VLKSM [All-Union Lenin Young Communist League], Komsomol committee secretary of cadet battalion in the Leningrad Higher Combined Arms Command School; appointed assistant chief of political section for Komsomol work in this school and regimental propagandist. Holder of medals.

Elected from the Communist Party of the Soviet Union.

Viktor Vasilyevich Gorbatko

Major general of aviation. Head, Correspondence Study Faculty, Air Force Engineering Academy imeni Professor N. Ye. Zhukovskiy. Born in 1934. Russian. CPSU members since 1959. In military service since 1953. Graduate of the Bataysk Military Aviation School for Pilots imeni A. K. Serov, Air Force Engineering Academy imeni Professor N. Ye. Zhukovskiy. Served as pilot, senior pilot. Starting in 1961, served in the Cosmonaut Corps as deputy commander, commander. Designated first deputy chairman for international sports ties and chairman of the Sports Committee Bureau of the USSR Ministry of Defense. Hero of the Soviet Union (twice). USSR pilot-cosmonaut. Awarded the orders of Lenin (three times) and Red Star, and medals. Board chairman, All-Union Society of Philatelists.

Elected from the All-Union Society of Philatelists.

Boris Vsevolodovich Gromov

Colonel general. Commander, Kiev Military District. Born in 1943. Russian. CPSU member since 1966. In military service since 1962. Graduate of the Leningrad

Higher Combined Arms Command School imeni S. M. Kirov; Military Academy imeni M. V. Frunze; Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, chief of staff and commander of a regiment. Subsequently occupied more responsible command positions. Commanded a limited contingent of Soviet troops in Afghanistan. Served as delegate to the 19th All-Union Party Conference. Hero of the Soviet Union. Awarded the orders: Lenin, Red Banner (twice), Red Star, For Service to the Motherland in the USSR Armed Forces, 3th class; and medals.

Elected from Priluki Territorial District No 542, Chernigov Oblast, Ukrainian SSR.

Aleksandr Borisovich Demin

Captain. Deputy company commander for political affairs. Born in 1957. Russian. CPSU member since 1981. In military service since 1976. Graduate of the Novosibirsk Higher Military Political Combined Arms School imeni 60th Anniversary of the October Revolution. Holder of medals.

Elected from Barabinsk Territorial District No 234, Novosibirsk Oblast, RSFSR.

Vasiliy Aleksandrovich Yerokhin

Major. Subunit deputy commander. Born in 1954. Russian. CPSU member since 1974. In military service since 1971. Graduate of a military school. Assignments include pilot, commander, and senior commander of helicopter. Commanded a helicopter unit. Fulfilled his internationalist duty in the Republic of Afghanistan. Awarded the Order of the Red Star, medals.

Elected from Aleksandriya Territorial District No 477, Kirovograd Oblast, Ukrainian SSR.

Aleksandr Nikolayevich Yefimov

Marshal of aviation. Commander in chief, Air Forces; and deputy USSR minister of defense. Born in 1923. Russian. CPSU member since 1943. In military service since 1941. Graduate of a military aviation school for pilots, the Air Force Academy imeni Yu. A. Gagarin, and the Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War served as pilot, flight commander, squadron commander, navigator in ground-attack air regiment. After the war commanded an air regiment, then an air division; occupied more responsible command positions. Served as first deputy commander in chief of the Air Forces. Elected delegate to the 23rd, 24th, 25th, 26th, 27th CPSU congresses, and to the 19th All-Union Party Conference. Member of the CPSU Central Committee. Deputy, USSR Supreme Soviet, 2nd, 9th, 10th and 11th sessions. Laureate of the USSR State Prize. (Twice) Hero of the Soviet Union. Awarded the orders: Lenin (three times), Red Banner (five times), Aleksandr Nevskiy, War

of the Motherland 1st Class (twice), Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class, and medals. Distinguished USSR military pilot. Candidate of military sciences.

Elected from the All-Union Organization of War and Labor Veterans.

Vladimir Petrovich Zolotukhin

Major. Correspondent-organizer of FRUNZEVETS newspaper published in the Turkestan Military District. Born in 1958. Russian. CPSU member since 1978. In military service since 1976. Graduate of the Tashkent Higher Combined Arms Command School imeni V. I. Lenin. Served as platoon leader, committee secretary of unit VLKSM, assistant school political section chief for Komsomol work, deputy commander of a motorized rifle battalion for political affairs. Fulfilled his internationalist duty in the Republic of Afghanistan. Holder of medals.

Elected from Tashkent-Kuybyshev Territorial District No 599, Tashkent Oblast, Uzbek SSR.

Vitaliy Pavlovich Ivanov

Admiral. Commander of the Baltic Fleet. Born in 1935. Russian. CPSU member since 1957. In military service since 1953. Graduate of the Saratov Naval Preparatory School, Higher Naval Submarine School imeni Lenin Komsomol, Naval Academy imeni MSU A. A. Grechko, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as mine and torpedo group commander, mine and torpedo unit commander; assistant submarine commander, senior assistant submarine commander, submarine commander. Subsequently occupied more responsible command positions. Appointed a directorate chief in the Main Staff of the Navy. Elected a delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Awarded the order For Service to the Motherland in the USSR Armed Forces, 2nd and 3th classes; and medals.

Elected from Kaliningrad Agricultural Territorial District No 178, Kaliningrad Oblast, RSFSR.

Nikolay Vasilyevich Kalinin

Colonel general. Commander, Moscow Military District. Born in 1937. Russian. CPSU member since 1958. In military service since 1955. Graduate of the Leningrad Suvorov Officer School imeni S. M. Kirov, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, regimental commander. Subsequently held more responsible command positions. Appointed commander of Airborne Troops. Elected delegate to the 26th CPSU Congress and to the 19th All-Union Party Conference. Awarded the orders:

October Revolution; For Service to the Motherland in the USSR Armed Forces, 2nd and 3rd classes; and medals.

Elected from the Communist Party of the Soviet Union.

Petr Ilich Klimuk

Major general of aviation. Chief of Political Department, Cosmonaut Training Center imeni Yu. A. Gagarin. Born in 1942. Belorussian. CPSU member since 1963. In military service since 1959. Graduate of the Chernigov Higher Aviation School for Pilots imeni Lenin Komsomol, Air Force Academy imeni Yu. A. Gagarin, Military Political Academy imeni V. I. Lenin. Served as pilot, senior pilot. Member of Cosmonaut Corps since 1965. Participated in three space flights. Appointed deputy commander of Cosmonaut Corps for political affairs. Elected delegate to the 25th, 26th, 27th CPSU congresses. Served as deputy, USSR Supreme Soviet, 10th Session. Twice Hero of the Soviet Union. USSR pilot-cosmonaut. Awarded three orders and the order For Service to the Motherland in the USSR Armed Forces, 3rd Class; and medals. Laureate of the USSR State Prize.

Elected from the All-Union Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF SSSR).

Ivan Nikitovich Kozhedub

Marshal of aviation. Military inspector and consultant, Inspectors-General Group, USSR Ministry of Defense. Born in 1920. Ukrainian. CPSU member since 1943. In military service since 1940. Graduate of the Chuguyev Military Aviation School for Pilots, Air Force Academy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. During the Great Patriotic War saw duty as flight instructor, senior pilot, flight commander, squadron commander, deputy commander of a fighter aviation regiment. After the war served as deputy commander, then commander of an air division, later held responsible positions in the Air Forces. Appointed first deputy commander for aviation of the Moscow Military District and performed responsible work in the central apparatus of the Air Forces. Elected delegate to the 19th, 21st through the 27th congresses of the CPSU, and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 2nd through 5th sessions. Three times a Hero of the Soviet Union. Awarded the orders of: Lenin (twice), Red Banner (seven times), Aleksandr Nevskiy, Patriotic War 1st Class, Red Star (twice), and For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF SSSR).

Aleksey Nikolayevich Kolinichenko

Colonel general. Born in 1932. Ukrainian. CPSU member since 1956. In military service since 1952. Graduate of the Odessa Military School imeni K. Ye. Voroshilov, Military Political Academy imeni V. I. Lenin (correspondence), Odessa State University (correspondence). Served as unit VLKSM committee secretary, assistant chief of large unit political section for Komsomol work. Subsequently held responsible positions in various political organs; appointed member of Military Council and chief of Political Directorate of the Belorussian Military District. Elected delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Awarded the orders: Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes, Badge of Honor; and medals.

Elected from Zheleznodorozhnyy National Territorial District No 514, Buryat ASSR.

Aleksandr Semenovich Kolodeznikov

Captain. Assistant section chief, Yakut Municipal Military Commissariat. Born in 1962. Yakut. Member of VLKSM since 1979. In military service since 1979. Graduate of the Tashkent Higher Combined Arms Command School imeni V. I. Lenin. Served as platoon leader. Fulfilled his internationalist duty in the Republic of Afghanistan. Awarded the Order of the Red Star (twice) and medals.

Elected from the All-Union Lenin Young Communist League.

Yuriy Arsenyevich Koltsov

Colonel. Unit deputy commander. Born in 1936. Russian. CPSU member since 1960. In military service since 1954. Graduate of a military school and a military academy. Awarded the Order of the Red Star and medals. Candidate of technical sciences.

Elected from Kerch Territorial District No 483, Crimean Oblast, Ukrainian SSR.

Ivan Ivanovich Korbutov

Colonel general. Commander of Northern Group of Forces. Born in 1935. Russian. CPSU member since 1961. In military service since 1952. Graduate of the Ulyanovsk Guards Higher Tank Command School imeni V. I. Lenin, Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, deputy battalion commander, battalion commander, deputy regimental commander, regimental commander. Subsequently held more responsible command positions; appointed first deputy commander of the Leningrad Military District. Elected delegate to the 19th All-Union Party Conference. Awarded the orders: Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class; medals.

Elected from Bobruysk National Territorial District No 95, Belorussian SSR.

Anatoliy Ivanovich Kostenko

Lieutenant general. Commander of the Belorussian Military District. Born in 1940. Russian. CPSU member since 1962. In military service since 1959. Graduate of the Odessa Higher Combined Arms Command School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, regimental chief of staff, regimental commander. Subsequently held more responsible command positions; appointed first deputy commander of the Belorussian Military District. Elected delegate to the 27th CPSU Congress. Awarded the orders: Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; medals.

Elected from Borisovskiy National Territorial District No 70, Belorussian SSR.

Nikolay Nikiforovich Kotlovtssev

Colonel general. President of the Central Committee, USSR DOSAAF. Born in 1926. Russian. CPSU member since 1951. In military service since 1944. Graduate of the Barnaul Infantry School, Military Academy imeni M. V. Frunze. Served as platoon leader, company commander, battalion executive officer. Held various command positions in the Strategic Missile Forces. Appointed head of the Military Academy imeni F. E. Dzerzhinskiy. Elected delegate to the 25th, 26th, and 27th congresses of the CPSU and to the 19th All-Union Party Conference. Awarded the orders: October Revolution, Red Banner, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF SSSR).

Konstantin Alekseyevich Kochetov

Army general. First deputy minister, USSR Ministry of Defense. Born in 1932. Russian. CPSU member since 1956. In military service since 1950. Graduate of the Lvov Infantry School imeni N. A. Shchors, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion executive officer, regimental deputy commander, regimental commander. Subsequently occupied more responsible command positions; appointed commander of Southern Group of Forces, Transcaucasian Military District, and Moscow Military District. Elected delegate to the 27th CPSU Congress and the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awarded orders: Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Odintsovo Territorial District No 37, Moscow Oblast, RSFSR.

Fedor Mikhaylovich Kuzmin

Lieutenant general. Commander, Baltic Military District. Born in 1937. Russian. CPSU member since 1963. In military service since 1956. Graduate of the Caucasian Suvorov Officer School, Leningrad Higher Combined Arms Command School imeni S. M. Kirov, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, battalion deputy executive officer, battalion commander, regimental chief of staff, regimental commander. Subsequently occupied more responsible command and staff positions; appointed first deputy commander of the Leningrad Military District. Elected delegate to the 27th CPSU Congress. Awarded the orders: October Revolution and For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Leninskiy Territorial District No 706, Latvian SSR.

Viktor Georgiyevich Kulikov

Marshal of the Soviet Union. Inspector general, Inspectors-General Group, USSR Ministry of Defense. Born in 1921. Russian. CPSU member since 1942. In military service since 1939. Graduate of the Groznenskiy Infantry School, Higher Officer Armor School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War served as platoon leader, company commander, battalion senior adjutant, deputy chief of staff and later chief of staff of a brigade. After the war held more responsible command and staff positions. Appointed first deputy USSR minister of defense and commander in chief of the Joint Armed Forces of Warsaw Pact Nations. Elected delegate to the 25th, 26th, and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 7th through 11th sessions. Laureate of the Lenin Prize. Hero of the Soviet Union. Awarded the orders: Lenin (four times), Red Banner (three times), Patriotic War 1st Class (three times), Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Organization of War and Labor Veterans.

Aleksey Dmitriyevich Lizichev

Army general. Chief, Main Political Directorate of the Soviet Army and Navy. Born in 1928. Russian. CPSU member since 1949. In military service since 1946. Graduate of the Cherepovets Infantry School, Military Political Academy imeni V. I. Lenin. Performed Komsomol work, starting as secretary of Komsomol organization of cadet battalion and ending with position of deputy chief of the Main Political Directorate of the

Soviet Army and Navy for Komsomol work. Subsequently held responsible positions in various political organs. Appointed member of the Military Council and chief of the Political Directorate of the Transbaykal Military District; deputy chief of the Main Political Directorate of the Soviet Army and Navy and chief of the Propaganda and Agitation Directorate; chief of Political Directorate of the Group of Soviet Forces in Germany. Member of the CPSU Central Committee. Deputy, USSR Supreme Soviet, 11th Session. Elected delegate to the 23rd, 24th, 25th, 26th, and 27th congresses of the CPSU and the 19th All-Union Party Conference. Awarded the orders: Lenin, Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from the Communist Party of the Soviet Union.

Vladimir Nikolayevich Lobov

Army general. First deputy chief, General Staff, USSR Armed Forces, and chief of staff, Joint Armed Forces of Warsaw Pact Nations. Born in 1935. Russian. CPSU member since 1959. In military service since 1954. Graduate of the Ryazan Artillery School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Commanded a platoon, company, battalion. Subsequently occupied more responsible command and staff positions; appointed first deputy chief of the USSR Armed Forces General Staff. Elected delegate to the 25th, 26th, and 27th congresses of the CPSU, and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Doctor of Military Sciences. Awarded the orders: Red Banner, Kutuzov 2nd Class; Red Star; For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Ayaguz National Territorial District No 135, Kazakh SSR.

Vladimir Nikolayevich Lopatin

Captain. Unit propagandist. Born in 1960. Russian. CPSU member since 1980. In military service since 1977. Graduate of the Achinsk Construction Tekhnikum; a higher military school. Elected committee secretary of unit VLKSM; became senior instructor in political section for Komsomol work, assistant chief of political section for Komsomol work. Holder of medals.

Elected from Vologda Territorial District No 145, Vologda Oblast, RSFSR.

Petr Georgiyevich Lushev

Army general. First deputy USSR minister of defense and commander in chief, Joint Armed Forces of Warsaw Pact Nations. Born in 1923. Russian. CPSU member since 1951. In military service since 1941. Completed courses for young lieutenants, Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy, Military Academy of the USSR Armed Forces General Staff

imeni K. Ye. Voroshilov. In the Great Patriotic War served as platoon leader, company commander. After the war occupied various command positions; appointed commander of the Volga, Central Asian, and Moscow military districts; commander, Group of Soviet Forces in Germany. Appointed first deputy USSR minister of defense. Member, CPSU Central Committee. Elected delegate to the 25th, 26th, and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 10th and 11th sessions. Hero of the Soviet Union. Awarded the orders: Lenin (twice), Red Banner, Red Star (twice), For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF SSSR).

Albert Mikhaylovich Makashov

Lieutenant general. Commander of the Ural Military District. Born in 1938. Russian. CPSU member since 1959. In military service since 1956. Graduate of the Poltava Military School, Tashkent Higher Combined Arms Command School imeni V. I. Lenin, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, regimental intelligence officer, battalion commander, regimental commander. Subsequently occupied more responsible command positions. Appointed first deputy commander of Transcaucasus Military District. Awarded the Order of the Red Star and the order For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Irbit Territorial District No 297, Sverdlovsk Oblast, RSFSR.

Yuriy Pavlovich Maksimov

Army general. Commander in chief, Strategic Rocket Forces; and deputy USSR minister of defense. Born in 1924. Russian. CPSU member since 1943. In military service since 1942. Graduate of the Moscow Machinegun School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War saw duty as platoon leader, company commander. After the war served as battalion commander, chief of staff and later commander of a regiment. Subsequently occupied more responsible command positions; appointed commander of the Turkestan Military District. Member, CPSU Central Committee. Elected delegate to the 26th and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Hero of the Soviet Union. Awarded the orders: Lenin (twice), October Revolution, Red Banner (three times), Patriotic War 1st Class (twice), For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Krasnoyarsk National Territorial District No 16, RSFSR.

Vilen Arutyunovich Martirosyan

Colonel. Unit commander. Born in 1940. Armenian. CPSU member since 1964. In military service since 1959. Graduate of the Kiev Military School of Communications; a military academy. Served as platoon leader, company commander, battalion commander, unit chief of staff. Awarded the order For Service to the Motherland in the USSR Armed Forces 2nd and 3 classes; and medals.

Elected from Rovno Territorial District No 509, Rovno Oblast, Ukrainian SSR.

Vladlen Mikhaylovich Mikhaylov

Colonel general. Deputy chief of General Staff, USSR Armed Forces. Born in 1925. Russian. CPSU member since 1945. In military service since 1942. Graduate of the Vladivostok Infantry School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, cadet company commander in military school. Functioned as battalion commander, chief of staff, then commander of regiment. Subsequently held more responsible command and staff positions. Awarded the orders: Lenin, October Revolution, Red Banner, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Buynaksk National Territorial District No 528, Dagestan ASSR.

Mikhail Alekseyevich Moiseyev

Army general. Chief of General Staff of the USSR Armed Forces and first deputy USSR defense minister. Born in 1939. Russian. CPSU member since 1962. In military service since 1958. Graduate of the Far Eastern Tank School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, deputy commander, then commander of regiment. Subsequently held more responsible command and staff positions; appointed commander of the Far Eastern Military District. Elected delegate to the 19th All-Union Party Conference. Awarded the order For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from the Communist Party of the Soviet Union.

Nikolay Andreyevich Moiseyev

Colonel general. Member of Military Council and chief of Political Directorate, Group of Soviet Forces in Germany. Born in 1934. Russian. CPSU member since 1955. In military service since 1952. Graduate of the Suma Artillery School imeni M. V. Frunze, Correspondence Higher Party School at the CPSU Central Committee, Military Political Academy imeni V. I. Lenin.

Performed Komsomol work, starting as unit Komsomol work instructor and ending as assistant Political Directorate chief of district for Komsomol work in group of forces. Subsequently held responsible positions in various political organs. Became member of Military Council and chief of Political Directorate of Turkestan Military District. Elected delegate to the 24th, 25th, and 27th CPSU congresses and to the 19th All-Union Party Conference. Awarded the orders: Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Central Territorial District No 316, Tula Oblast, RSFSR.

Ivan Sergeyevich Morozov

Colonel general. Commander of the Odessa Military District. Born in 1936. Russian. CPSU member since 1957. In military service since 1954. Graduate of the Petrozavodsk Military School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, deputy commander, then commander of regiment. Subsequently held more responsible command positions; appointed first deputy commander of the Far Eastern Military District. Elected delegate to the 19th All-Union Party Conference. Served as deputy, USSR Supreme Soviet, 11th Session. Awarded the orders: October Revolution, Badge of Honor; and medals.

Elected from Tiraspol Territorial District No 704, Moldavian SSR.

Aleksandr Ivanovich Ovchinnikov

Lieutenant general. Member of Military Council and chief of Political Directorate of the Turkestan Military District. Born in 1937. Russian. CPSU member since 1958. In military service since 1954. Graduate of the Leningrad Anti-Aircraft Technical School, Rostov State University, Military Political Academy imeni V. I. Lenin, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Performed Komsomol work, starting as unit VLKSM committee secretary and ending with senior instructor in Komsomol work department of the Ground Forces Political Directorate. Subsequently held responsible positions in various political organs; became member in Military Council and appointed chief of Political Directorate of the Siberian Military District. Elected delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Awarded the orders: Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Chirchik National Territorial District No 120, Uzbek SSR.

Bronislav Aleksandrovich Omelichev

Colonel general. First deputy chief of General Staff, USSR Armed Forces. Born in 1935. Russian. CPSU member since 1960. In military service since 1953. Graduate of the Cherepovets Military School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, regimental commander. Subsequently occupied more responsible command and staff positions; appointed chief of a main directorate in the General Staff of the USSR Armed Forces. Elected delegate to the 19th All-Union Party Conference. Awarded the orders: Red Star (twice), For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Iolotan National Territorial District No 428, Turkmen SSR.

Vladimir Vasilyevich Osipov

Colonel general. Born in 1933. Russian. CPSU member since 1958. In military service since 1951. Graduate of the Kiev Joint Self-Propelled Artillery School, Military Academy of Armor Troops imeni MSU R. Ya. Malinovsky, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander. Promoted to chief of staff, then to commander of regiment. Subsequently held more responsible command positions; appointed commander of the Kiev Military District. Member of the CPSU Central Committee. Elected delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awarded the orders: Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Bendery Territorial District No 698, Moldavian SSR.

Valeriy Nikolayevich Ochirov

Colonel. Commander of air regiment. Born in 1951. Kalmyk. CPSU member since 1975. In military service since 1969. Graduate of the Syzran Higher Military Aviation School for Pilots, Military Political Academy imeni V. I. Lenin. Served as copilot-navigator, squadron deputy commander for political affairs, squadron commander, regimental deputy commander. Fulfilled his internationalist duty in the Republic of Afghanistan. Hero of the Soviet Union. Awarded the Order of Lenin and Order of the Red Star; and medals.

Elected from Universitetskiy National Territorial District No 548, Kalmyk ASSR.

Ivan Mitrofanovich Panov

Lieutenant general. Chief editor of newspaper KRASNAYA ZVEZDA. Born in 1927. Russian. CPSU member since 1947. In military service since 1944.

Graduate of Naval political school, Military Political Academy imeni V. I. Lenin. Served as literary worker, correspondent-organizer in fleet newspapers, editor of large-circulation newspaper aboard a cruiser, and senior instructor in the Political Directorate of the Navy. In KRASNAYA ZVEZDA worked as literary worker, consultant, department editor, first deputy chief editor. Elected delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Awarded the orders: Labor Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the Union of Journalists of the USSR.

Nikolay Semenovich Petrushenko

Lieutenant colonel. Senior instructor in political section of large unit (soyedineniye) for propaganda and agitation. Born in 1950. Belorussian. CPSU member since 1972. In military service since 1969. Graduate of the Kharkov Tank Command School, Sverdlovsk Higher Military Political Tank-Artillery School (correspondence). Served as committee secretary of unit VLKSM; assistant chief of unit (soyedineniye) political section for Komsomol work; deputy battalion commander for political affairs; unit propagandist; and chief of party aktiv school. Holder of medals.

Elected from Leninogorsk Territorial District No 622, East Kazakhstan Oblast, Kazakh SSR.

Viktor Andreyevich Pisarenko

Colonel. First deputy chief, Political Department, Siberian Military District. Born in 1944. Russian. CPSU member since 1967. In military service since 1963. Graduate of the Kharkov Higher Military Aviation School for Pilots imeni Twice Hero of the Soviet Union S. I. Gritsevets, Military Political Academy imeni V. I. Lenin, Academy of Social Sciences at the CPSU Central Committee. Served as pilot, senior pilot, squadron deputy commander for political affairs, chief of political section of unit, later of large unit (soyedineniye). Awarded the order For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Kamenskiy Territorial District No 69, Altay Kray, RSFSR.

Viktor Semenovich Podziruk

Lieutenant colonel. Unit senior instructor. Born in 1944. Russian. CPSU member since 1974. In military service since 1962. Graduate of a higher military school, Journalism Faculty of the Tartu State University, a military academy. Occupied a number of command and staff positions. Candidate of military sciences. Holder of medals.

Elected from Ivanovo National Territorial District No 9, RSFSR.

Nikolay Ivanovich Popov

Army general. Born in 1930. Russian. CPSU member since 1953. In military service since 1948. Graduate of the Saratov Tank School imeni P. V. Volokh, Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, deputy regimental commander, then regimental commander. Subsequently occupied more responsible command and staff positions; appointed commander of the Siberian and Turkestan military districts. Member of the Central Inspection Commission of the CPSU. Elected delegate to the 25th and 27th CPSU congresses, and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awards include the Order of Lenin and the order For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Kyvrak National Territorial District No 620, Nakhichevan ASSR.

Stanislav Ivanovich Postnikov

Army general. Born in 1928. Russian. CPSU member since 1947. In military service since 1948. Graduate of the Shuya Infantry School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, regimental commander. Subsequently held more responsible command and staff positions; appointed commander of the North Caucasus, Baltic, and Transbaykal military districts; promoted to first deputy commander in chief of Ground Forces. A member of the CPSU Central Inspection Commission. Elected delegate to the 27th CPSU Congress and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awarded the orders: Red Banner, Kutuzov 1st Class, and For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Brest Territorial District No 547, Brest Oblast, Belorussian SSR.

Boris Filippovich Pylin

Lieutenant colonel. Senior instructor in Kacha Higher Military Aviation School for Pilots imeni A. F. Myasnikov. Born in 1951. Russian. Member of CPSU since 1973. In military service since 1970. Graduate of the Kacha Higher Military Aviation School for Pilots imeni A. F. Myasnikov, Military Air Academy imeni Yu. A. Gagarin. Served as pilot; held various staff positions. Awarded medals.

Elected from Sovetskiy Territorial District No 139, Volgograd Oblast, RSFSR.

Igor Nikolayevich Rodionov

Colonel general. Commander of the Transcaucasus Military District. Born in 1936. Member of CPSU since 1956. In military service since 1954. Graduate of the Orlovskiy Tank School, Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion deputy commander, regimental deputy commander, regimental commander. Subsequently occupied more responsible command positions. Appointed first deputy commander of the Moscow Military District. Elected delegate to the 19th All-Union Party Conference. Awarded the Order of Red Banner and the order For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Borzhomi Territorial District No 660, Georgian SSR.

Vladimir Magomedovich Semenov

Colonel general. Commander of the Transbaykal Military District. Born in 1940. Karachai. Member of CPSU since 1963. In military service since 1958. Graduate of the Baku Higher Combined Arms Command School imeni Supreme Soviet of the Azerbaijan SSR, Military Academy imeni M. V. Frunze, and Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander, regimental commander. Subsequently held more responsible command positions; appointed first deputy commander of the Transbaykal Military District. Awarded the order For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Kyakhta National Territorial District No 523, Buryat ASSR.

Aleksandr Petrovich Silantsev

Marshal of aviation. Inspector-advisor in Inspectors-General Group of the USSR Ministry of Defense. Born in 1918. Russian. Member of CPSU since 1942. In military service since 1938. Graduate of the Perm Military Aviation School, Stalingrad Military Aviation School, Military Air Academy imeni Yu. A. Gagarin, and Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Duty in Great Patriotic War included fighter pilot, flight commander, squadron commander, navigation officer in fighter regiment, flight and navigation instructor in an Air Force fighter aviation directorate. After the war held various command and staff positions in line units and in the Main Staff of the Air Forces. Since March of 1988, president of the Soviet War Veterans Committee. Elected delegate to the 25th CPSU Congress. Hero of the Soviet Union. Awarded the orders: Lenin (twice), Red Banner (three times), Patriotic War 1st Class (twice),

Patriotic War 2nd Class, Red Star (three times), For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Organization of War and Labor Veterans.

Viktor Vasilyevich Skokov

Colonel general. Commander of the Carpathian Military District. Born in 1932. Russian. Member of CPSU since 1959. In military service since 1950. Graduate of the Caucasian Suvorov Officer School, Military Academy imeni M. V. Frunze, and Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, chief of staff, later commander of regiment. Subsequently held more responsible command and staff positions; appointed commander of the North Caucasus Military District. Elected delegate to the 26th and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awarded the orders: October Revolution, Red Star, and For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Kovel Territorial District No 412, Volynsk Oblast, Ukrainian SSR.

Ivan Ivanovich Skrobuk

Lieutenant colonel. Subunit commander. Born in 1943. Polish. Member of CPSU since 1965. In military service since 1962. Graduate of the Kiev Command and Technical School imeni M. V. Frunze. Served as senior technician, battery deputy commander, senior engineer, subunit deputy commander. Awarded the order For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Slonim Territorial District No 562, Grodno Oblast, Belorussian SSR.

Vladimir Sergeyevich Smirnov

Colonel. Unit deputy commander. Born in 1946. Russian. Member of CPSU since 1969. In military service since 1964. Graduate of a higher military school. Served in various command positions. Awarded the Order of Red Star and medals.

Elected from Akhtubinsk Territorial District No 124, Astrakhan Oblast, RSFSR.

Yuliya Yuryevna Sokolova

Senior instructor working with families of servicemen assigned to the Main Political Directorate of the Soviet Army and Navy. Born in 1932. Russian. Member of CPSU since 1971. Employed by Soviet Army since 1958. Graduate of the Leningrad Pedagogical Institute imeni A. I. Gertsen. Worked as secondary school teacher, kindergarten teacher, librarian, training methods specialist, lecturer in Propaganda and Mass Cultural Work

Department of the Soviet Army Central House. Presidium member, Soviet Women's Committee. Distinguished cultural worker of the RSFSR. Holder of medals.

Elected from women's committees united by the Soviet Women's Committee.

Aleksey Ivanovich Sorokin

Admiral of the fleet. First deputy chief, Main Political Directorate of the Soviet Army and Navy. Born in 1922. Russian. Member of CPSU since 1943. In military service since 1941. Completed training and retraining courses for political personnel; graduate of the Military Political Academy imeni V. I. Lenin. In the Great Patriotic War saw duty as mortar crew commander, battalion Komsomol organizer, regimental Komsomol organizer. After the war performed Komsomol work. Subsequently served as deputy commander for political affairs of a number of ships; held responsible positions in various political organs of the Pacific Fleet. Later served as member of the Military Council and chief of the Political Directorate of the Northern Fleet; deputy chief of the Main Political Directorate of the Soviet Army and Navy; chief of Propaganda and Agitation Directorate; member of the Military Council and chief of the Political Directorate of the Navy. Candidate for membership in the CPSU Central Committee. Elected delegate to the 25th, 26th, and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 11th Session. Awarded the orders of: Lenin, October Revolution, Patriotic War 1st Class (twice), Patriotic War 2nd Class, Labor Red Banner; Red Star (twice), and For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from the All-Union Organization of War and Labor Veterans.

Mikhail Ivanovich Sorokin

Army general. Deputy USSR minister of defense and chief inspector of USSR Ministry of Defense. Born in 1922. Russian. Member of CPSU since 1943. In military service since 1941. Completed 'Vystrel' courses; graduate of the Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War served as rifle company commander, battalion deputy commander, battalion commander, regimental deputy commander. After the war held more responsible command positions. Appointed commander of the Leningrad Military District and saw duty as chief military adviser in the Republic of Afghanistan. Delegate to the 22nd and 26th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 10th and 11th sessions. Awarded the orders of: Lenin (three times), Red Banner (twice), Aleksandr Nevskiy, Patriotic War 1st Class (twice), Red Star (twice), and the Badge of Honor; and medals.

Elected from Altay National Territorial District No 3, RSFSR.

Mikhail Semenovitch Surkov

Major general. Chief of political organ. Born in 1945. Russian. Member of CPSU since 1968. In military service since 1965. Completed courses for political personnel; graduate of the Military Political Academy imeni V. I. Lenin. Served as deputy company commander for political affairs, assistant chief of large unit political section for Komsomol work, deputy battalion commander for political affairs, regimental party committee secretary, regimental deputy commander for political affairs. Subsequently held various positions in political organs. Awarded the Order of Red Star and medals.

Elected from Leninakan—Shirakskiy National District No 396, Armenian SSR.

Dmitriy Semenovitch Sukhorukov

Army general. Deputy USSR minister of defense for personnel and chief of Main Personnel Directorate of USSR Ministry of Defense. Born in 1922. Russian. Member of CPSU since 1944. In military service since 1939. Graduate of the Leningrad Military Engineering School, Military Academy imeni M. V. Frunze, Higher Academy Courses at the Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Commanded a platoon and cadet company in military school. Since 1944 has been on active Army duty, emerging from the war as battalion commander. After the war served in the Airborne Troops as battalion commander, regimental commander, in various other responsible positions. Appointed commander of the Central Group of Forces and of Airborne Troops. Elected delegate to the 26th and 27th CPSU congresses and to the 19th All-Union Party Conference. Awarded the orders of: Lenin (twice), October Revolution, Red Banner (twice), Kutuzov 1st Class, Patriotic War 1st and 2nd classes, Red Star; and medals.

Elected from Lubny Territorial District No 506, Poltava Oblast, Ukrainian SSR.

Yuriy Petrovich Sychev

Lieutenant colonel. Instructor, Department of Scientific Communism, Leningrad Higher Military Political School of PVO imeni Yu. V. Andropov. Born in 1953. Russian. Member of CPSU since 1973. In military service since 1971. Graduate of the Sverdlovsk Higher Military Political Tank Artillery School, Military Political Academy imeni V. I. Lenin. Served as deputy company commander for political affairs, regimental propagandist.

Elected from Maritime Territorial District No 57, City of Leningrad, RSFSR.

Ivan Moiseyevich Tretyak

Army general. Commander in chief of PVO Troops and deputy USSR minister of defense. Born in 1923. Ukrainian. Member of CPSU since 1943. In military service since 1939. Graduate of the Astrakhan Rifle and

Machinegun School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. In the Great Patriotic War saw duty as company commander, battalion commander, and regimental commander. After the war held a number of command and staff positions. Appointed deputy minister of defense and chief inspector of the USSR Ministry of Defense. Member of the CPSU Central Committee. Deputy, USSR Supreme Soviet, 7th through 11th sessions, Hero of the Soviet Union, Hero of Socialist Labor. Awarded the orders of: Lenin (four times), Red Banner (three times), Kutuzov 3rd Class, Aleksandr Nevskiy, Patriotic War 1st Class, Red Star (twice), and For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from the All-Union Organization of War and Labor Veterans.

Nikolay Dmitriyevich Tutov

Senior lieutenant. Committee secretary of unit VLKSM. Born in 1961. Russian. Member of CPSU since 1988. In military service since 1979. Graduate of the Kiev Higher Military Engineering School of Communications imeni M. I. Kalinin. Served as subunit engineer. Holder of medals.

Elected from Orenburg Agricultural Territorial District No 244, Orenburg Oblast, RSFSR.

Aleksandr Ivanovich Uvarov

Senior lieutenant. Committee secretary of unit VLKSM. Born in 1962. Russian. Member of CPSU since 1984. In military service since 1980. Graduate of the Riga Higher Military Political School imeni MSU S. S. Biryuzov. Served as deputy subunit commander for political affairs. Awarded a medal.

Elected from the All-Union Lenin Young Communist League.

Vadim Nikolayevich Urvant

Major. Secretary of unit party bureau. Born in 1951. Ukrainian. Member of CPSU since 1975. In military service since 1969. Graduate of the Kamenets-Podolskiy Higher Military Engineering Command School imeni Marshal of Engineering Troops V. K. Kharchenko. Served as platoon leader, committee secretary of battalion VLKSM, deputy company commander for political affairs, battalion party organization secretary, deputy battalion commander for political affairs. Awarded the Order of the Red Star and medals.

Elected from Shepetovka Territorial District No 534, Khmel'nitskiy Oblast, Ukrainian SSR.

Petr Petrovich Falk

Lieutenant colonel. Unit senior navigation officer. Born in 1951. German. Member of CPSU since 1974. In

military service since 1969. Graduate of the Kacha Higher Military Aviation School for Pilots. Served as pilot, senior pilot, flight commander, squadron deputy commander, squadron commander. Awarded medals.

Elected from Buzuluk Territorial District No 246, Orenburg Oblast, RSFSR.

Ivan Vasilyevich Fuzhenko

Lieutenant general. Commander of the Turkestan Military District. Born in 1937. Ukrainian. Member of CPSU since 1958. In military service since 1954. Graduate of the Odessa Military School, Military Academy imeni M. V. Frunze, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander. Subsequently held more responsible command and staff positions; saw duty as adviser in the Republic of Afghanistan; appointed first deputy commander of the Turkestan Military District. Elected delegate to the 27th CPSU Congress. Awarded the orders of Red Banner and Red Star; and medals.

Elected from Termez Territorial District No 592, Surkhan-Darya Oblast, Uzbek SSR.

Konstantin Aleksandrovich Kharchenko

Major. Deputy subunit commander for political affairs. Born in 1948. Russian. Member of CPSU since 1969. In military service since 1966. Graduate of a higher military school, Military Political Academy imeni V. I. Lenin. Awarded the order For Service to the Motherland in the USSR Armed Forces 3rd Class, and medals.

Elected from Kalinin Municipal Territorial District No 180, Kalinin Oblast, RSFSR.

Aleksandr Valeryanovich Tsalko

Colonel. Unit commander. Born in 1946. Belorussian. Member of CPSU since 1971. In military service since 1963. Graduate of a higher military school, a military academy. Fulfilled his internationalist duty in the Republic of Afghanistan. Awarded the orders of Red Banner, For Service to the Motherland in the USSR Armed Forces 3rd Class, and medals.

Elected from Kalinin National Territorial District No 12, RSFSR.

Nikolay Vasilyevich Chekov

Colonel general. Deputy USSR minister of defense for construction and troop billeting. Born in 1931. Russian. Member of CPSU since 1958. In military service since 1953. Graduate of the Morshansk Construction Tekhnikum. Studied in the Moscow Construction Engineering Institute imeni V. V. Kuybyshev; continued his studies in the Naval Faculty of the Leningrad Construction Engineering Institute. Served as work expeditor, later held various responsible positions in military construction units and in the central apparatus of the USSR

Ministry of Defense. Awarded the orders: October Revolution, Labor Red Banner, and Badge of Honor; and medals. Distinguished Builder of the RSFSR.

Elected from the All-Union Volunteer Society for Cooperation with the Army, Aviation, and Navy (DOSAAF SSSR).

Vladimir Nikolayevich Chernavin

Admiral of the fleet. Commander in chief of the Navy and deputy USSR minister of defense. Born in 1928. Russian. Member of CPSU since 1949. In military service since 1947. Graduate of the Higher Naval School imeni M. V. Frunze, Naval Academy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as unit commander, assistant submarine commander, senior assistant submarine commander, submarine commander. Subsequently held a number of responsible command and staff positions; appointed chief of Main Staff and first deputy commander in chief of the Navy. Member of CPSU Central Committee. Elected delegate to the 26th and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 10th and 11th sessions. Hero of the Soviet Union. Awarded the orders of: Lenin (twice), October Revolution, Red Banner, Red Star; and medals.

Elected from Lenkoran Territorial District No 678, Azerbaijan SSR.

Vitalyy Mikhaylovich Shabanov

Army general. Deputy USSR minister of defense for armaments and chief of armaments of USSR Ministry of Defense. Born in 1923. Russian. Member of CPSU since 1947. In military service since 1941. Graduate of the Leningrad Military Aviation Engineering Academy. Fought in the Great Patriotic War. After the war held various engineering positions. Served as deputy chief designer, first deputy chief designer, chief designer, then managing designer of a design office. Subsequently appointed general director of a scientific production association; deputy minister of USSR radio industry. Member of CPSU Central Committee. Elected delegate to the 26th and 27th CPSU congresses and to the 19th All-Union Party Conference. Deputy, USSR Supreme Soviet, 9th through 11th sessions. Hero of the Soviet Union. Laureate of USSR State Prize. Candidate of technical sciences. Awarded the orders: Lenin (twice), October Revolution, Red Banner, Patriotic War 1st Class, Labor Red Banner, Red Star, For Service to the Motherland in the USSR Armed Forces 2nd and 3rd classes; and medals.

Elected from Khmel'nitskiy Territorial District No 531, Khmel'nitskiy Oblast, Ukrainian SSR.

Yuriy Nikolayevich Shatrovko

Senior sergeant. Cadet in the Voroshilovgrad Higher Military Aviation School for Navigators imeni Donbass

Proletariat; deputy platoon leader. Born in 1967. Russian. Member of VLKSM since 1981. In military service since 1985. Fulfilled his internationalist duty in the Republic of Afghanistan. Served as squad leader. Holder of medals.

Elected from the All-Union Lenin Young Communist League.

Vladimir Gennadyevich Shkanakin

Lieutenant general of aviation. Unit commander. Born in 1935. Russian. Member of CPSU since 1958. In military service since 1953. Graduate of a higher military aviation school for pilots, Military Air Academy imeni Yu. A. Gagarin, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as pilot, senior pilot, flight commander, squadron commander. Commanded a regiment, then a division. Fulfilled his internationalist duty in the Republic of Afghanistan. Subsequently held various command positions. Awarded the Order of Red Banner (twice) and Order of Red Star; and medals.

Elected from Tashkent-Leninskiy Territorial District No 597, Tashkent Oblast, Uzbek SSR.

Ivan Ivanovich Shulgin

Senior lieutenant. Assistant political section chief for Komsomol work in surface vessel force. Born in 1962. Russian. Member of CPSU since 1982. In military service since 1980. Graduate of the Kiev Higher Naval Political School. Served as deputy division commander for political affairs aboard aircraft-carrying cruiser, committee secretary of ship's VLKSM, senior political section instructor for Komsomol work of surface vessel force. Awarded a medal.

Elected from the All-Union Lenin Young Communist League.

Lev Sergeyevich Shustko

Colonel general. Commander of the North Caucasus Military District. Born in 1935. Russian. Member of CPSU since 1960. In military service since 1952. Graduate of the Ulyanovsk Guards Higher Tank Command School imeni V. I. Lenin, Military Academy of Armor Troops imeni MSU R. Ya. Malinovskiy, Military Academy of the USSR Armed Forces General Staff imeni K. Ye. Voroshilov. Served as platoon leader, company commander, battalion commander. Subsequently held more responsible command positions; appointed first deputy commander of the Turkestan Military District. Elected delegate to the 19th All-Union Party Conference. Awarded the orders: October Revolution, Red Banner, and For Service to the Motherland in the USSR Armed Forces 3rd Class; and medals.

Elected from Zaterechnyy National Territorial District No 628, North Ossetian ASSR.

Sergey Vyacheslavovich Yastrebtsov

Captain. Company commander. Born in 1960. Russian. Member of CPSU since 1981. In military service since 1978. Graduate of a higher command school. Served as platoon leader. Fulfilled his internationalist duty in the Republic of Afghanistan. Awarded the Order of Red Star (twice) and medals.

Elected from Izmail Territorial District No 501, Odessa Oblast, Ukrainian SSR.

COPYRIGHT: "Kommunist Vooruzhennykh Sil", 1989

Col Gen Morozov on Congress' Response to Military Housing, Other Problems

18010877 Moscow KRASNAYA ZVEZDA in Russian
2 Sep 89 First Edition p 2

[Interview with Colonel General I. Morozov, USSR People's Deputy, Troop Commander of the Odessa Military District, by Colonel N. Mulyar under the rubric "Deputy's Forum": "Problems Await Solutions"]

[Text]

[Mulyar] Comrade Colonel General, in the letters received by the editorial staff and in meetings with officers, warrant officers, and members of their families at the garrisons one hears dissatisfaction with the fact that little has been said about problems of daily life in the Armed Forces at the Congress of People's Deputies and in the course of the session of the USSR Supreme Soviet. Did the military men really have nothing to say about this issue?

[Morozov] It is wrong to conclude that the military deputies avoided the issue. Remember the speech of General of the Army A.D. Lizichev. It was he who, for the first time, named the figure that more than 100,000 officers do not have a place of their own and cannot find jobs for their wives or preschool institutions for their children. His speech met with not only the understanding but the support of a majority of the deputies.

The military deputies have raised this problem many times in deputy's inquiries. It was explained to us that the budget had been distributed even before the Congress and that there simply are no more extra funds for the Army's social problems. Billions of rubles have been allotted for the development of the national economy, and a portion of the funds will go to the construction of housing for the families of servicemen expected to be discharged in connection with the reduction of the Armed Forces. This is why we did not speak out. And the way the issue is raised must be well thought-out, considered, and practical. To what I have already said I will add that I do not remember any important meeting recently at which the issue of improvements in the Army's social sphere was not raised directly or indirectly...

[Mulyar] The other day, with your permission, I acquainted myself with the mail you receive as a People's

Deputy. The letters come from many different places, but the majority of them share the same message—a request for help with housing. The letters are from servicemen as well as the Army's industrial and office employees. It is apparent that the problem of housing in the district is critical. What is being done to alleviate the situation?

[Morozov] Yes, the problem of housing is one of the most important for us. You can judge for yourself. About 12,000 officers and warrant officers are on a waiting list, and the list is not getting smaller. Compared to last year the number of those without apartments increased by 530 families. These are generally the young officers and warrant officers.

What should we do? We came to the conclusion that we can save the situation by constructing buildings with so-called *malosemeyki* [apartments for small families]. We will build them at the major garrisons and oblast centers. Of 111,000 square meters of housing to be brought into operation next year, 60,000 will go for one- and two-room apartments. This will allow us to reduce the waiting list and to lower costs for young families, many of whom live in private apartments and must pay a considerable amount of money toward rent.

In addition, we are trying to obtain an allotment of authorized housing from the funds of the local soviets. Last year's debt totaled 8 percent. This figure is very good, but in order to reduce it we are establishing close contacts with the Odessa, Nikolayev, and Simferopol gorispolkoms and the local authorities of other cities.

There is still one more approach. The military district could take on a portion of the construction. But the oblispolkoms, with the exception of Odessa's, are unwilling to consider it. It is a pity.

At the major garrisons they have also begun to convert unused barracks and administrative buildings over to housing. Those people who live in "apartments" of this sort will not be taken off the apartment waiting list. And in the meantime this will provide lodging for people.

As you see, there are very many difficulties. Not only do we lack apartments, but also secondary schools and kindergartens. We need additional funds and building materials, but for now there are none. As a result of this, the district cannot solve all the problems in the near future. We need the help of the local soviets. They could improve the supply of food to the stores near the families of servicemen so that the officers do not worry about the next bite of meat, and they could allot more seats in the kindergartens. The issue is already being resolved in several cities. I would like to say a word of thanks to the leadership of the Odessa oblispolkom. Together we have composed a plan for the social and cultural development of the garrisons. We have considered issues which will be resolved through the resources of both the military district and the oblispolkom. I wish we could find similar grounds for cooperation with the leadership of the other oblispolkoms.

[Mulyar] It is no secret that the prestige of military service has fallen lately. It is evident, in particular, from the number of young officers applying for transfer to the reserves. And the unsettled state of their daily life and poor material security play a significant role in their decision, which flatly disproves the narrow-minded contention that "the officers rake in money hand over fist."

[Morozov] Unfortunately, I must say that there are even some among the deputies who attempt to ascribe the country's well-known economic difficulties to the "catastrophic military burden." That is an extreme of course. But whatever it is, the salary that the younger officers receive falls short of their work input. But it would be wrong to say that this is the only thing which affects the prestige of the service. If a person genuinely loves his profession and values it, then material gain becomes a secondary consideration. This is strictly my own opinion, and others might think differently. I remember 1954 when I began my service in the Arctic. We lived in cold earthen huts, but no one applied for transfers. Back then the word "Army" was sacred. Many aspired to pass its service school for officers and become a serviceman. And the Komsomol and the well-regulated military-patriotic indoctrination played a significant role in that. Today it has somehow begun to fall into decay. Fewer and fewer genuine Komsomol leaders can be found in the military units, service schools for officers, and vocational training schools.

The prestige of the Army is also undermined by the one-sided, quite frequently slanderous publications of some of the mass media and by the slogans which have been appearing in some individual regions to the effect that "The Soviet Army is an army of occupation," etc. And again, the problems in the social sphere. I believe that there has long been a need, when a military unit cannot guarantee an officer housing, to pay him a housing allotment. It should be a law at the remote garrisons. We must build consumer enterprises for the wives of the officers and warrant officers. And it is very important in my opinion to pass a law stating that the record of labor service continues for the wives of servicemen at those garrisons where job placement is not guaranteed. Is a woman really to blame who, possessing a higher education and having endured privations and hardship with her husband, has no pension or means of subsistence in her old age? Or take the issue of guaranteeing housing to an officer. The resolution of the USSR Council of Ministers which grants housing to an officer within a period of three months after transfer to the reserves is not carried out in practice. Or take, for example, the commentary to the rules on the registering citizens in need of improvement in housing conditions and allocating them habitable premises in the UkSSR, promulgated in 1987. The commentary states that those discharged from military service and claiming the right to housing privileges will be provided housing in a strict sequence determined by a general principle—according to the time they were accepted on the apartment register. What does that mean in practice? That an officer spends

5-6 years trying to obtain an apartment. It is time to pass a law, not a resolution, granting him an apartment immediately after discharge.

[Mulyar] Ivan Sergeyevich, up until now we have talked about social protection of the officer and his family on the part of the government. But does social justice triumph in the Army itself? One man serves in Moscow or in an oblast center without leaving the city's borders, advances in the service, and receives an apartment. Another fills exactly the same position at a dreary garrison in the steppe and enjoys no more privileges than the first. Is there no way to strike a balance?

[Morozov] It is not fair, of course. But in this case much can be resolved locally. I will give you an example. On my arrival at the Odessa Military District I was struck by a similar picture. It had already become a practice for only 10 percent of the officers and warrant officers to be sent to the remote rayons, while the rest were sent to groups of forces. I had to turn to the Chief of the Main Personnel Directorate of the USSR Ministry of Defense to restore the justice you are speaking of. He supported us in everything. Now up to 45 percent of the servicemen are rotated out to remote spots. And we make an especially careful study of candidates for a post.

[Mulyar] In my work as a journalist I have several times discovered incidents where a commander who had committed abuses attempted to discharge a good officer for revealing the violations. And it is not always possible to bring such a commander to justice. But if there were a law at this level, an appropriate article in a code, few would undertake to break it... This issue is complicated and requires careful consideration. I know that some of the elected representatives are introducing a proposal to create a club of military deputies. It is expected that this issue may be discussed at one of its sessions. As well as the Army's other social problems. And then it will be submitted for discussion at a Congress of People's Deputies. What is your opinion?

[Morozov] Legal acts which reliably guarantee both the social and legal defense of the officer and his family are certainly needed. And I think that the military deputies will yet raise the issue. It is rare, but it occasionally happens that an overly zealous commander tries to settle scores with a subordinate solely for the reason that the latter told the truth to his face. If such incidents are discovered we will take the strictest measures, right up to a petition for discharge from the Army. And there are other facets to this issue. Why not, let us say, develop a law establishing liability for insulting a man in uniform? With regard to the opinions of lawyers and scholars, it could be discussed at a session of the club of military deputies. For this reason I support the idea of creating such a club. There will be appreciable benefit from it.

Col Gen Pyankov Notes Hardships of Retired Servicemen

18010893 Moscow KRSNAYA ZVEZDA in Russian
14 Sep 89 First Edition p 2

[KRSNAYA ZVEZDA interview with Col Gen B. Pyankov, commander of the Siberian Military District and USSR people's deputy: "Living Conditions Are an Area of Policy"]

[Text]

Background Information

Col Gen Boris Yevgenyevich Pyankov was born in Sverdlovsk in 1935. His father was a shoemaker, his mother a seamstress. There were seven children in the family. Boris Pyankov completed a tank command school, which he entered after serving 2 years as a tank crewman in the Transcaucasus Military District. He began his officer's career as commander of a tank platoon and then a company in the Ural Military District. He served 5 years in the Strategic Missile Forces.

He graduated from the Military Academy of Armored Troops with a gold medal in 1969. He has commanded a battalion and a regiment and served as chief of staff of a tank division and division commander in the Transcaucasus Military District. He graduated from the General Staff Military Academy of the USSR Armed Forces in 1979—also with a gold medal. He has served in various positions in the Central Asian Military District and the Group of Soviet Forces in Germany. From the position of army commander he was promoted to First Deputy Commander of the Odessa Military District. For the past 2 years he has served as Commander of the Siberian Military District. He was elected a USSR people's deputy.

[KRSNAYA ZVEZDA] Boris Yevgenyevich, when discussing the district, you devote a lot of attention to social problems. Why, in your opinion, has the matter of living conditions become so acute of late?

[Pyankov] We did not ignore these matters, along with many others, even in the past. It has now become particularly clear, however, that living conditions, particularly housing for the families of officers and warrant officers, are a concern not just for the billeting agencies and special services, but precisely for those at the top. The reduction of the Armed Forces, the combat readiness of the units and the morale of the people are fundamentally linked to them. Living conditions are not merely a social matter, but also a political one.

[KRSNAYA ZVEZDA] Problems of living conditions are viewed in precisely that way today in the nation as a whole....

[Pyankov] Of course. It is all particularly acute in the army, however. What does one say to an officer who, after a quarter of a century of serving honorably and performing his duties conscientiously, has to start a new life like a recent graduate, without an apartment or basic

conveniences, without a job, without the services available to all, without the right even to the infamous sugar coupons? And what does one say to an officer who applies for early discharge into the reserve because his family has never had its own apartment? And how does one convince parents they are doing the wrong thing by going to a school to request that their son be removed as a cadet because they want a more reliable future for him? I dealt with such a case literally yesterday.

[KRASNAYA ZVEZDA] For some reason we have felt that such problems are not as acute in Siberia as in the European part of the nation. That is apparently not so.

[Pyankov] In Novosibirsk and at many other garrisons the families of servicemen wait years for apartments, living at best in makeshift dormitories or in private apartments. To the usual hardships and deprivations of the service are added additional problems, extremely painful and annoying, frequently difficult to explain. Many local soviets have fallen far behind in their commitments to the Ministry of Defense, and the deficit continues to grow. Novosibirsk was supposed to receive more than 200 apartments this year, but we received only eight in the first 6 months. The city shorted us by more than 16,000 square meters of housing in the Ministry of Defense's share of its construction, and 3.5 million rubles were allocated in good time for this purpose.

[KRASNAYA ZVEZDA] Perhaps the military construction workers could have applied these funds more effectively?

[Pyankov] Unfortunately, that is out of the question. Maximum use is already being made of the capabilities of the military construction workers for erecting housing. They fulfilled their plan for the first 6 months by 126%, and they have worked just as hard in the past. With respect to building housing with inside funds and means, this is not permitted for perfectly understandable reasons.

[KRASNAYA ZVEZDA] Do you feel that you have the support and concern of local party, soviet and management agencies?

[Pyankov] We have good relations at all levels. This in no way simplifies the matter, however, and does not make it easier to solve the problem. Policy in this area is inseparable from economics, after all. The fulfillment of the decree passed by the CPSU Central Committee and the USSR Council of Ministers on providing for the families of servicemen and improving their social and living conditions was recently discussed at a session of the Secretariat of the Novosibirsk Oblast party committee. Lt Gen Ye. Mikulchik, member of the district military council and chief of its political directorate, presented a report. The discussion was serious and important to both sides. As has frequently been the case and continues to be, however, we never pinpointed who was to blame for the fact that the situation has become so acute. Nor did we specify deadlines for the deficit to be

made up. We are still grateful to the CPSU oblast committee, however, for the fact that it focused the attention of party and soviet leaders on the problem. We would also be grateful to other party committees and soviets if they would bring up this matter. One has the impression, after all, that servicemen today have been placed into a situation of receiving services last. At the Krasnoyarsk Garrison, for example, not a single square meter of housing was allocated to us this year. Only 124 of the 1,640 square meters specified by law was allocated at the Abakan Garrison. The situation is approximately the same at the Kemerovo Garrison.

[KRASNAYA ZVEZDA] Are there garrisons where the problem is being resolved differently?

[Pyankov] The situation has improved markedly at the Omsk Garrison, where there was also a major indebtedness. It has basically been made up. The full amount specified for 1989 was allocated at the Tyumen Garrison.

[KRASNAYA ZVEZDA] Will many officers and warrant officers discharged as a result of the army's reduction remain in Siberia?

[Pyankov] Many of them will. They have come to love this region and its nature. Fortunately, one does not yet hear the word "immigrant" in its political meaning here. Many of them simply have nowhere else to go. They no longer have parents and no longer have a place there where they came from. Excellent specialists in various fields will remain in the region with its harsh climate. They can immediately start to work in a new field, particularly if the local agencies show some concern for them.

[KRASNAYA ZVEZDA] Boris Yevgenyevich, you are deeply involved in social problems also as a USSR people's deputy....

[Pyankov] Ninety percent or more of the questions frequently raised by the electors involve social issues to one degree or another. These are difficult issues, but almost all of them can perfectly well be resolved. Local agencies have to deal with them almost on a daily basis. I am particularly concerned about the problem of providing housing and personal services for Great Patriotic War veterans and former soldier/internationalists.

[KRASNAYA ZVEZDA] What hopes do you have in connection with the latest decree passed by the USSR Council of Ministers on steps to improve the availability of housing for servicemen discharged from the Armed Forces into the reserve?

[Pyankov] I want to believe that this document of great legal force exists not just for effect but will be accepted for absolute implementation in all areas of the nation. The enthusiasm expressed in a recent KRASNAYA ZVEZDA article, I do not share, unfortunately. I foresee that everything will continue to be accomplished with difficulty and complications, just as it is now.

Readers Respond to Arbatov Article on Restructuring Armed Forces

18120121z Moscow *INTERNATIONAL AFFAIRS* in English No 8, Aug 89 pp 133-143

["Letters to the Editors": "On Aleksey Arbatov's Article 'How Much Defense Is Sufficient?'"]

[Text]

Not Avoiding What Is Not Commonplace

I read Alexei Arbatov's article "How Much Defence is Sufficient?" with great interest. To my mind, it is the most serious piece of writing on Soviet military policy in our press. The article is attractive above all for its boldness in raising, within the framework of a debate, a host of signal issues pertaining to the nation's defensive capacity.

Until recently it was normally believed that only career members of the Armed Forces could speak out on such matters, let alone the fact that they are the ones who shape military policy as such. Outwardly this looked logical: indeed, who if not professionals, in this case the men in uniform, know best the state of affairs in a specific sphere?

Regrettably, the uniform and even ranking-officer's stripes do not by themselves guarantee infallibility of the decisions taken in the strictest secrecy, without public involvement in such a vitally important endeavour. We, the "uninitiated", have not even been granted the right to know with what means, at what cost and how reliably our own security has been ensured. For 70 years the nation has given the army everything it could, even more. For decades we were brought up in the serene conviction that at least in the army everything is in order, that "our armour is strong and our tanks are fast". We believed in this contrary to common sense and a system approach. Meanwhile negative processes were developing in the army, albeit in a concealed form, that were similar to those taking place in society as a whole.

A sudden sobering effect came on the shameful day when an impudent West German lad landed his sports plane right on Red Square, having unimpededly crossed the Soviet border and penetrated the deeply echeloned air defence system. It was then that many people, both in the army and in society at large, gave matters serious thought.

The impenetrable wall of secrecy that surrounds the activity of our military department to this day is evoking growing concern on the part of public opinion that is awakening from its lengthy hibernation: Is the nation's security truly reliably secured? How much is being spent on defence, and is it being spent reasonably? Are there possibilities for greatly reducing armaments and armed forces without detriment to our defensive capacity? Do we need such a cumbersome and extremely expensive military machine, considering the crisis our economy is in? Lastly, does it make sense to switch from compulsory

military service to, say, a professional army? How does the policy of extensive military exports to developing countries jell with the new political thinking? How is the officially proclaimed doctrine of adequate defence being pursued?

Regrettably, our military far from always provide convincing answers to such questions. One gets the feeling that the army is not used to frank talk, that its officials react painfully to society's critical concern for the state of affairs in the military sphere, unjustifiably regarding this as all but an attitude of antipathy to the nation's defenders. I am convinced that no one in this country has, nor can have, a negative attitude to the army, the flesh and blood of the Soviet people. The same can all the more be said of this author, who grew up in the family of a career officer and fighter at the front in the Second World War, and who spent 12 years with him in military garrisons and cities. All I am saying is that the army should be helped in surmounting its historically shaped introvertedness and in finding through concerted efforts the optimal ways and means of enhancing the effectiveness of the military policy while simultaneously strengthening the defensive potential.

This is what I view to be the point of Alexei Arbatov's article, which may not have suited everyone since it openly raises a host of thorny issues of Soviet military policy in the light of the changes apace not only in our society but in international relations as well.

I can anticipate the first objections: Can a non-military person discourse on such things as military doctrine and strategy and delve into special questions where the military still consider themselves alone to be competent?

Essentially, this posing of the issue can not only and not so much be a manifestation of narrow-professional haughtiness but also that of the painfully familiar departmental approach typical of our stagnation-ridden past, the bitter fruits of which we will be reaping for a long time to come. The example of the Ministry of Water Resources, which is accusing scientists and writers of incompetence, should caution all of us against professional snobbism. The uncontrolled arbitrariness of "professionals" has cost the country too dearly.

First of all, we are talking here about the author, a prominent expert in international security and disarmament who has published a large number of serious writings. Secondly, one can allude to the example of the West, where most military theorists from the most authoritative research centres are ordinary civilians, which does not prevent them from having a fine grasp of the specifics of military matters. Lastly, it has long been said in all seriousness that war is too important an undertaking to entrust to generals.

Incidentally, in all civilised countries the post of minister of defence is occupied by political figures, not professional military men, which in no way lessens the defensive capacity of the USA, France, Britain or any other member of the Western alliance. There are, of course,

national traditions, and here we are, regrettably, closer to the Afro-Asian model. By the way, in the number of marshals (even excluding the marshals of services) we are solidly in first place worldwide, even in our peaceful times. This highest military rank, after all, was initially conferred for successful handling of strategic operations during the civil war and the Great Patriotic War, even though there were some curious exceptions (Marshal Beria). As early as the 1950s-1970s the title of marshal had, in my opinion, become morally devaluated, especially after it had been conferred upon Leonid Brezhnev. And now, 44 years after the end of the Great Patriotic War, when peaceful international relations are being established, conferment of the title of marshal merely for a post occupied looks like an unjustified anachronism.

Let us return, however, to the main theme of this article. Indeed, "how much defence is sufficient" and how much should it cost? I don't think that anyone could give definitive answers to these questions today. But the answers should already be sought if only because this is required by the proclaimed doctrine of defence sufficiency, that is, if people do not want to reduce it to another propaganda ploy.

Arbatov's article is a constructive contribution to the search for answers to the issues raised by the times. One cannot but agree with him when he states that reasonable defence sufficiency cannot be reduced to a simple decrease in a certain number of troops and armaments. The point should be a sweeping overhaul of strategy, operational plans and armed forces, including by way of reduction, revision of modernisation programmes, and redeployment—above all with the aim of extensively buttressing the country's defensive capacity over the long term.

I am fully in agreement with the way the author poses the problem of secrecy in the national security sphere. There is necessary and justified secrecy, and there is invested secrecy—not from a rather well-informed enemy equipped with sophisticated means of space-based intelligence gathering, but in effect from one's own people. In just the same way as there is national security and departmental, corporative "security", which is vigilantly protected by an 18-million-strong bureaucratic host. The army unquestionably has specific needs, but it cannot have interests different from the interests of society, of the entire nation, serving which is its overriding duty.

Any Soviet military expert or journalist specialising in international affairs can freely receive a rather complete idea of the long-term military programmes being undertaken in the USA or, say, in France (one merely needs to know the appropriate foreign language), as these programmes and the outlays for them are published openly in the press and are discussed in parliaments. Only Soviet society does not know about its own defence programmes, and has just learnt about the resources spent on defence. Nevertheless, the figure of 77.3 billion roubles announced at the Congress of People's Deputies,

in my opinion is far from complete, especially in comparison with the US military budget of about 300 billion dollars.

There is no point in rehashing all the proposals for rendering our defence policy more efficient while simultaneously buttressing our defensive capacity that were contained in the Arbatov article. I find them rather convincing. The main thing that the author is proposing is to concentrate efforts on the main, most advanced, areas of military development that would take account of our strong and vulnerable points, and not to continue senseless (and totally unjustified, even from the standpoint of national security interests) dispersion of the taxpayers' money for dubious and ineffective programmes. The accent in military policy and production should be placed on qualitative rather than quantitative parameters. If the notion of cost accounting is applicable to the defence sphere at all, this accounting, as Arbatov rightly pointed out, should be manifested in maximum returns that would ensure truly reliable, guaranteed security of the Soviet people.

Implementation of the proposals formulated by the author of the article could in his opinion theoretically reduce our arms expenditures by as much as 50 per cent in as early as the next five year-plan period, with the nation's defensive capacity being qualitatively bolstered. Certainly a very alluring prospect, especially in the context of our extremely acute economic problems. It would be worthwhile to explore it in a more qualified way, and at the same time discuss Arbatov's proposals, but this should be done not behind closed doors, as we are accustomed to doing, but in an open and constructive scientific debate. We should not avoid discussion of national security matters, which is so unusual for us. The more open and fruitful the discussion, the more correct the choice of the optimal variants of maintaining the defence capacity at the level of reasonable sufficiency and the more successfully we can resolve our neglected economic and social problems.

One last point. We are increasingly learning of instances where military units are used to restore law and order in different parts of the country. It is my conviction that the Soviet Army should not be utilised for these purposes, which is fraught with the gravest moral consequences. It is one thing when the military help the people in times of natural disasters, as this is a humane mission, and it is quite another when they perform policing functions that are in essence not endemic to them. We are not, after all, living in a banana republic. There is the sufficiently powerful arsenal of the Ministry of the Interior, which incorporates the Interior Troops, and which is specially trained to maintain public order. The army, however, should engage only in its work—reliably ensuring the external security of the USSR.

Pyotr Cherkasov, D. Sc. (Hist.), Senior Research Associate, Institute of General History, USSR Academy of Sciences, Moscow

There Aren't Any Problems

I think that with regard to so principled and topical an issue as how much defence is sufficient you have let a person incompetent in this sphere contribute to your journal. The author is searching for an answer on the sidelines. As a result, he is basing it on dogmas of US Sovietologists, referring to their sources and presenting all this "in the light of the new doctrine and strategy", thus injecting his viewpoint into the formation of our military course. Probably the author should have been helped if it was he who was to write on the problem in question. I believe that you will allow experts, too, to speak out on the pages of your journal on the adequate defence issue. We readers will be provided an opportunity to compare views.

The essence of my criticism of sorts against your lies not only and not so much in the afore-mentioned. The fact of the matter is that Alexei Arbatov adduces Mikhail Gorbachev's words to the effect that "there is no roof on earth or in space under which one could take shelter from a nuclear thunderstorm should it break out". Further, he writes: "Surely statements by the head of our state and our Defence Council are a strategic guidance for all the military agencies concerned". How is this to be understood? As criticism with a hint at the military department's insubordination to the political leadership?

If this is combined with the author's statements to the effect that earlier "defence became largely exempt from control by society, whose interests it must serve" or "the problem lies above all else in the lack of glasnost and unclassified information on military matters", etc., then it is probably in this way that he should be understood.

What is more, he hints that the military department is concealing something from society. Where is all this coming from? From a lack of information? Hardly. Arbatov unquestionably knows that the Soviet Armed Forces have always been under the direct leadership of the CPSU and the government. He knows who heads the Defence Council and who commands the Soviet Armed Forces; he knows that political bodies function in them as bodies of the party, and that the Main Political Department of the Soviet Army and Navy has the status of a department of the CPSU Central Committee. Lastly, he knows that from one year to the next thousands of Soviet citizens serve in the Soviet Armed Forces as representatives of society for whom there are no problems of a "lack of glasnost and unclassified information on military matters", just as there is no lack of it in our publications.

As a historian, Arbatov should also be aware of the fact that preservation of state secrets on defence matters is a necessary measure each country takes to enhance its defensive capacity. These are state measures, not departmental ones. So the questions arise: Why is the author acting in this way? Why is he attempting to oppose someone? What is his aim in doing so?

Please put these questions to him.

Lieutenant-General (Ret.) Fyodor Rybintsev, Moscow

Stating With a Soldier's Straightforwardness

After I finished the article I, a career military man, was intrigued by it that I decided to reread it. I began with the words of Mikhail Gorbachev: "The problem is so acute that we will also have to take a look at our defence spending. A preliminary study has shown that we can reduce it without lowering the level of our national security or defence potential."

The words are well known, but after a second reading they produced a different impression on me. The first proposal, whether General Secretary Gorbachev liked it or not, prompted the idea that had not a (non-military) problem been so (sic) acute no one would even have considered revising military expenditures. Everything would have proceeded according to the Brezhnev scheme. To the question: How much are we spending on defence? Brezhnev himself would answer: "We are spending as much as we need to". At that time such a reply evoked wonderment at the leader's wisdom. And now, though much later, another question is being posed: "But how much is necessary?"

Gorbachev's second sentence enables us to look farther. If the level of defensive potential does not decline as a result of reductions in military spending, then it will even increase due to the transformations that will take place within the part of the Armed Forces that remains after the reductions.

I believe that it is high time to examine military-industrial and purely military matters at the Central Committee Plenary Meeting. The point at issue is not submitting state secrets of special importance for nationwide scrutiny but discussing the most vital problems which are not a secret to anyone.

I agree with Alexei Arbatov that the problem lies above all else in the lack—to put it mildly—of glasnost and openness in military matters. And the essence is not even that the defence expenditures figure is frightening. The official defence budget approved by the USSR Supreme Soviet previous convocation includes only expenditures for the upkeep of the personnel of the Armed Forces, materiel, military development, pensions and a number of others. Such weighty defence expenditures as financing research and development and also purchasing armaments and military hardware come under different articles of the USSR State Budget. For their part, with their greater share they finance research, testing and capital investments into production facilities and not arms purchases. The questions suggest themselves: Are we right when we say that the army consumes a lot of money? Isn't it high time to use a normal and more exact word combination—the military-industrial complex, in which the industrial part has a much bigger appetite?

Why does the USA have two or three types of intercontinental ballistic missiles and we have more? Probably when different design offices were being formed and assigned the same tasks, good aims were being pursued—ensuring competition in work. Later, however, each of them, drawing on the levers and methods known to them, managed, and are still managing to push their creations through. As a result, we have in the troops not one best system, but several systems which cannot be identical in their fighting capabilities. Furthermore, because of this military schools are forced to train specialist officers with a much greater number of different profiles. Many officer graduates are assigned to new systems that they have not studied. When most officers go through service they sometimes have to change them a number of times. This also makes for difficulties in upgrading combat expertise, difficulties which are not always overcome in due time because of new appointments.

After pushing through its system, a military-industrial firm is not satisfied with this. As experts know, it immediately compiles a plan for field changes, which it then carries out, and at a high price. These field changes are astonishingly simple, but fabulously expensive considering all the expenditures, among them, travelling expenses and allowances for field testers.

The arms race is not profitable for the military, since it does not have a very good effect on their living conditions. At the present juncture they are such that fewer and fewer people want to enter military schools, and in some places there simply are not enough applicants. Commanders and political workers engage in recruiting candidates for these schools according to plans imposed from above. It is not hard to guess about the nature of this "recruitment"—just anyone is talked into entering, so long as the plan is fulfilled. Sometimes a soldier agrees to enter a school solely in order to diversify his not always pleasant service. Now imagine the graduate of a military institution of higher learning who got there by chance, and who, for that matter, studied things other than those he will be working with. Such situations are not rare in the army today.

It is not fortuitous that the forthcoming armed forces reduction is impelling many of the most capable and energetic officers, especially young ones who have a great deal to lose, to retire. True, what has thus far kept them from doing so has been their hope for serious governmental measures to improve living and working conditions for the military. And if such measures do not follow in the immediate future, we will be only talking about qualitative parameters of the personnel. The military do not count on additional expenditures by the country, but they see the reserves which can appear as a result of intradepartmental reforms that will ultimately lead to improvements in the armed forces.

To my mind, the overriding imperative is a revamping of the organisational structure of the services. It presupposes the elimination of intermediate, unnecessary and

sometimes hampering echelons of management; a revision of the structure of units with the aim of precisely delimiting the functions of the fighting and auxiliary units, and abolition of posts at which people simply do not know what to engage in throughout the day!

It would be expedient to turn over to civilians posts not linked with running units and services. This applies above all to the teaching faculty and laboratory staff of military higher educational establishments in the general-education disciplines, medical and other service personnel.

Unit commanders should be given full financial independence and an incentive to save funds. His present position forces him to spend money left and right in order to justify allocations on all budget items. I do not have to go into details—commanders know what I am referring to.

Military hardware should be ordered from different enterprises, its fighting possibilities and price stipulated, and it should be purchased on a competitive basis. Major purchases should have sanction of the USSR Supreme Soviet.

It would be a good idea to introduce the principles of cost accounting in the army. This is a separate major issue, however.

Despite the fact that we are still unprepared for the transition to a professional army, it is high time to elaborate its concepts, since we will arrive at it sooner or later. We are frightened by the cash allowances paid out to the personnel of the US Armed Forces. But we do not have to pay soldiers as much as American soldiers are paid, or as much as people in other occupations are paid, until this becomes possible. Why then make such comparisons? And how long can one keep giving simplistic answers to enormously difficult questions? I propose that we engage in serious computations, without concealing them from a wide range of experts: How much will we actually spend in excess of what we have spent, and how much will we gain? We will gain in the political and moral situation, in combat expertise and combat capability. We will gain from reductions of expenditures which are now necessary but will become unnecessary. We will gain in the sense that professionals will not break so much very expensive hardware and other equipment, as today's soldiers are doing. We can continue for a long time, and this is necessary.

Alexei Arbatov raises chiefly matters pertaining to military doctrine and strategy. My considerations are of a different order and, evidently, do not apply directly to international affairs, but I believe that our armed forces and our nation are not indifferent to them.

Anatoly Yuryev, Lt. Col., Orenburg

A Forum of NATO and WTO!

US analysts are following the reasonable sufficiency/defensive doctrine debates among Soviet military and academic specialists with great interest. Part of the discussion has focused on the need for a more candid exchange of data and analyses between civilian and military institutions.¹ In the essay that follows here, I would like to extend the logic of this argument and suggest that bilateral analysis is also needed to support "new thinking" between the major alliances.

Questions about national security within the Soviet Union today are as important to citizens of the US as they are to citizens of Europe. If my reading of what has transpired to date is correct, there seem to be three levels of concern about military forces. We might think of these as an analytical *matryoshka*,² a nested set of interests.

The first level is the matter of defining the problem. Here, there seem to be three related issues: What is reasonable?, What is sufficient?, and What is defensive?. The second level is the need to recognise, if not reconcile, the different "world views" or perspectives that the North Atlantic Treaty Organisation (NATO) and the Warsaw Treaty Organisation (WTO) bring to bear on these questions. The final level is the issue of what could be done, methodologically, about reconciliation when perspectives are different.

Political and military scientists in both alliances have studiously avoided the sufficiency question for years. Here President Gorbachev must be given credit for making all of us uncomfortable by raising the issue again.

The Western equivalent of the reasonable sufficiency argument is the question, "how much is enough?". The issue of "enough" is now further complicated by an apparent desire to define sufficiency in terms of defense, not offense. This suggests that what has been sufficient in the past is no longer reasonable and surely not defensive. Such judgements expose some unstated assumptions, i. e., both sides' military capabilities have developed to a point where respective forces might be irrational and overly offensive. While the Soviets seem to have framed these questions, there appears to be agreement in the West on the validity of the larger issues raised. If this were not true, the recent Intermediate Nuclear Force (INF) agreement would have been impossible, and prospects for Strategic Arms Reduction Talks (START), Conventional Forces Europe (CFE) discussions would be bleak indeed.

Thus in general terms, NATO and the WTO seem to have solved the first part of the puzzle. Without pointing fingers of blame, the major coalitions have agreed on the nature of the problem, a large first step for future solutions. We have not agreed on the specifics of *sufficiency* nor the requirements for *defense*, yet we have agreed that existing forces are unreasonably offensive and not sufficiently defensive.

This conclusion is unavoidable in light of conceptual approaches outlined by alliance CFE negotiations in March 1989 in Vienna. Here each side recognised the need to maintain a balance at *lower levels*, reduce forces that constitute a potential for *surprise attack*, and eliminate capabilities for conducting large-scale *offensive operations*. Further, both sides have now agreed on some of the specific forces which constitute offensive threats. These are: *tanks, artillery, armored vehicles, strike aircraft, combat helicopters, and personnel*.

Thus, without too much acrimony, NATO and the WTO have established the general terms of the forthcoming debate. This is a significant achievement in itself. Now, as Alexei Arbatov reminds us, defining "the limit of defense sufficiency is the cardinal question of modern political and military science".³ Arbatov's challenge, interestingly enough, is directed at military and civilian analysts. His charge points to an important analytical asymmetry between the major alliances. In the past, WTO military specialists have dominated arms control analysis, while civilians have controlled similar debates in NATO. Now we see civilians playing a larger role in the East and military analysts playing an expanded role in the West. This new analytical pluralism should provide, at a minimum, some new thinking and possibly pave the way for some reconciliation of perspectives.

Perspectives

It would be simplistic to suggest that there is only one perspective dominating each side. In fact, there are many views among the seven WTO states and the 16 NATO nations. Nonetheless, there is a tendency on both sides to ascribe a particular view to the major coalitions.

Indeed, there may be a real need for each side to reach *some* consensus on perspective. Otherwise, it might be impossible to negotiate as an alliance. This tension between individual and group beliefs is as old as civilization. Yet, if there is a need to reconcile perspectives, there is also a prior need to understand them. Further, I would suggest that there are as many contradictions within respective "world views" as there are points of agreements. If this is true, reality seems to be a flexible commodity.

NATO is often portrayed as a subjective alliance.⁴ Just as frequently the WTO is characterised as an objective coalition.⁵ These polarities are modern attempts to classify an otherwise complex world. Yet, there appears to be some truth in these broad characterizations, each derived from philosophical heritage. The varying views of democracy provide an illustration.

The Socialist tradition tends to define democracy in terms of objective obligations, while the Western tradition tends to define democracy in terms of subjective rights. Critics claim that the citizens of socialism are too controlled, while Western democracies are too permissive. (Humorists often suggest that being good is the goal in the East, while feeling good is the goal in the West.) Clearly, citizens in every country have both obligations

and rights, the difference is one of emphasis. Yet, this emphasis has produced very different societies. In one, the perspective is from top to bottom, while in the other, the perspective is bottom to top. Each is a legitimate, yet very different, vision of democracy.

Members of both alliances also like to think of themselves as rational. Indeed, rationalism seems to produce large crops of absolutes in both camps. One set is borne of dialectics, the other is borne of dogma. Yet, each is an attempt to define the same reality. Arbatov puts his finger on the dilemma: "Can recognition of objective reality be made conditional on the other side's subjective opinion? After all, the law of gravity would not be called off if the US refused to recognize it."⁶

On this point, I disagree with Doctor Arbatov. The laws of science and the laws of man have always been subject to revision. All laws change with time; they are changed by improved understanding. Reality is not objective or subjective; it is both, and much more. Indeed, truth and reality are belief systems. What we believe is real, and these beliefs are infected by myths as often as they are supported by facts. As long as there is more than one side to anything, reality is "conditional".

Arbatov's frustration with "subjective opinion" merely serves to remind us of the limits of reason and scientific method. In a perfect world, the ideal analyst assembles the correct facts, interprets them with proven methods, and then comes to reasonable judgement. Yet, even this is not enough! Who bridges the gap between analysis and acceptance? The barrier to acceptance is often a long-held bias that resists argument, reason, or emotion. Belief systems are as real as the laws of nature, and we need to understand both in order to build bridges to new consensus.

The current debate in the US over "rational deterrence" illustrates Arbatov's dilemma. American political scientists are concerned that our policy of deterrence might not be as rational as it could be. One school supports inductive models that tend to capture biases and the other supports inductive experiments that would root them out.⁶ How this debate will be resolved is far from certain, yet this much is sure. Both parties agree that national policies are vulnerable to *unreasonable* fears and beliefs. If this were not true, we would have few disagreements and little need for negotiations. (Political scientists are fond of studying the obvious).

The subjective characterizations of NATO and the objective characterizations of the WTO are riddled with internal contradictions. If we put too much faith in either, we are hard pressed to understand why NATO methods for calculating the *military balance* are objective (i. e., using sterile numerical ratios), and WTO methods for calculating the *correlation of forces* are often subjective (i. e., using qualitative factors). Indeed, Western analysts regularly assume that NATO forces are qualitatively superior to those of the WTO, yet at the same time NATO uses few standard tools to measure

quality or factor it into calculations of combat potential. Conversely, the WTO, assumed to be qualitatively inferior, uses analyses which calibrate quality.⁷

The dissonance which characterises these methods suggest yet a final level in our *matryoshka* where opposing views and misperceptions might be reconciled.

In 1988, General Yazov offered that the Soviet were willing to "compare quantity and quality" of arms and doctrine through "bilateral analysis" of combat potentials.⁸ More recently, Soviet academics have restated this requirement. "We must do it by joint effort," says Alexei Arbatov. Such proposals should not be dismissed too quickly. Inter-alliance forums for collaborative military analysis could get us to the heart, the core of perceptual differences.

Multilateral Analysis

To date, both alliances have demonstrated good faith in political, diplomatic, cultural, and economic forums. Yet, arms control requires collaboration on several levels: policy collaboration, negotiation collaboration, and *analytical collaboration*.

While perceptions spring from many roots (ideological, cultural, historical, etc.), military beliefs tend to be formalised by analysis, methods of assessment. There is a great need to understand comparative methods for calculating combat capability. The benefits of such exchanges are twofold. First, they would provide a primary source for illuminating what is, and is not, important in NATO and WTO calculations. Second, a better understanding of assessment methods could furnish an opportunity to identify the comparative values and weights assigned to critical factors.

An inter-alliance analytical forum might be composed of experts from civilian and military institutes within NATO and the WTO. Such a group would focus on comparative analytical processes in order to solve the objective and subjective differences that seem to plague arms control positions. Each side likes to believe that its position is derived from logic and reason, yet unilateral analyses continue to produce distinct visions of reality. The flaw of this approach seems obvious. Unilateral analysis does not provide adequate support for bilateral or multilateral negotiations.

There are two separate issues here. The first is the question of whether or not joint analysis would help to resolve long-standing data and methodological problems. The second issue is the question of whether or not qualitative factors (i. e., measures of effectiveness) should be used to determine the realitive military balance in support of arms control. Proceeding on the assumption that we must walk before we can run, the answer to the first question should be an unqualified "yes". Multilateral analysis might then provide answers for the second question.

Both alliances waste too much energy arguing over what belief is "correct," "objective," or "realistic". In fact, unilateral analysis produced too many realities. Each alliance, captives of parochial analysis, produces its own version of truth. The problem is not so much a question of what is *real* as it is a question of how *beliefs* about reality are different. Bridging the gap between beliefs, analyses, and acceptance is the final test of reasonableness. This can only be done by reconciling different analytical methods. With such a process, reality is negotiable.

G. Murphy Donovan, Lt. Col., USAF, Washington, D.C., 202-767-1103, 19 June 1989

Footnotes

1. Alexei Arbatov, "How Much Defense is Sufficient", INTERNATIONAL AFFAIRS, April 1989, pp. 31-44.
2. A *matryoshka* is a traditional Russian toy, a nested set of wooden dolls, one inside the other, usually painted as peasant women.
3. Alexei Arbatov, "Reasonable Sufficiency: Where Does It End?", NEW TIMES, No. 12, April 25-1 May, 1989, p. 13.
4. Robert Levine, "NATO, the Subjective Alliance: The Debate Over the Future," Rand Corporation, R-3607-FF/CC/RC. April 1988.
5. Dmitry Pogorzelsky, "Vienna: After and Before", (an interview with Victor Karpov, USSR Deputy Foreign Minister), NEW TIMES No 7, Feb. 14-20, 1989, p. 7.
6. See WORLD POLITICS, Vol. XLI, No. 2, Jan. 1989. This issue is devoted to the rational deterrence debate in the US.
7. Maj. Gen. Yu. Lebedev and A. Podberezkin, "On the Eve of the Second Round," IZVESTIA, 5 May 1989, Morning Edition, p 4.
8. General D. T. Yazov, "On the Military Balance of Forces and Nuclear Missile Parity," PRAVDA, 8 Feb. 1988, Second Edition, p. 5.

COPYRIGHT: MID SSSR, Obshchestvo "Znaniye". Mezhdunarodnaya zhizn" 1989

English Translation: COPYRIGHT: Progress Publishers 1989

Qualitative Parameters: Reforming Pre-Draft Training

18010894 Moscow KRASNAYA ZVEZDA in Russian
14 Sep 89 First Edition p 2

[Article by Maj Gen V. Belousov, Penza Oblast Military Commissar, under the rubric "Combat Readiness: Quality Parameters": "At the Origins"]

[Text] Reading the KRASNAYA ZVEZDA articles under the rubric "Combat Readiness: Quality Parameters" I have thought more than once that the "foundation" of the combat readiness, the military discipline and the moral strength of the army and navy is laid in the families of the draftees, at the schools, special vocational and technical schools, tekhnikums and DOSAAF training organizations, at enterprises, on kolkhozes and sovkhoses—there where we workers with the military commissariats are at hand.... Are we doing everything necessary? Does our work measure up to the spirit of the times in all respects?

One can be lulled by the figures, by the statistical depiction of this work, of course. The number of training facilities with the complete physical training complex for initial military training has grown by 20% in the past 2 years. A total of 18,000 youth have now been at the 38 defense sports and physical fitness camps. Every third draftee is a specialist trained at oblast DOSAAF training organizations.

I shall frankly say that we would not have achieved this if not for the harmonious and coordinated efforts of party, soviet and Komsomol organs, oblast DOSAAF organizations and military commissariats.

I could not swear, however, that I am completely satisfied with the preparation of the youth for military service. And just how could one be satisfied, when, after every "cycle" of preparatory activities, some youth suddenly announce that they do not want to serve in the military. They most frequently try to evade the service, and when we persist and force them into the formation, they go AWOL from the unit....

I can honestly say that we did not overly publicize these instances in the past. We felt that if the general public knew as little as possible about this scandal, the negative phenomenon would on its own recede into the past and not repeat itself. It turned out otherwise, however. The silence gave rise to rumors and conjectures. The prestige of workers in the military commissariats dropped. It became more and more difficult for us to perform our job. And all of this in a situation in which cases of our draftees going AWOL from the units and evading the service continued to occur.

We had to find the courage honestly to acknowledge the defect in our work. We consulted people about how to organize it for the future. This was probably the most difficult step. We took it, though, and publicized our problems for all to hear. We did not assume the entire blame, however. That too would have been unfair. We shared it with the specific family, the school and local agencies. This is what we did, for example, when it became known that Pvts I. Yafarov and V. Galin, conscripts from Maloserdobinskiy Rayon, had gone AWOL from the unit.

Maj V. Vazhenov, military commissar, spoke at a rayon teachers' conference, in the rural soviets, over the local radio and in the local press.

There was a storm of reaction from the public. There were numerous arguments and many questions. The main question was how could people from there degrade the honor of the region. How could they turn out to be such wimps.

The situation had to be discussed. Members of the party raykom went to the people together with workers from the rayon military commissariat. The subject of preparing the youth for the military service received broad public response.

Or take the matter of "hazing." Incidentally, the "hazing" toxin has a paralyzing effect not just upon certain educators in the army. It also affects the "civilian" sector.

We met with the leaders of schools, special vocational and technical schools and tekhnikums, informed them about how their students were serving and answered numerous questions. At the same time workers with the military commissariat took on the job of establishing ties with our training institutions and enterprises and the military units in which their charges serve.

At our request the party obkom soon conducted a seminar/conference in Kuznetskiy Rayon with second secretaries of CPSU raykoms and gorkoms and with the deputy chairmen of rayon and city ispolkoms of the oblast. The comrades studied the work performed by rayon enterprises and farms to establish and maintain ties of military sponsorship with the units and ships where our draftees serve.

What would I single out from this experience? First and foremost, the send-offs of the youths into the service. The labor collectives now publicly honor the youth they prepare for the service. They are presented with memorial badges, valuable gifts and certificates. The administration issues orders of commendation on the youth, which note their contribution to production. Veterans and the best workers or kolkhoz members make parting speeches.

This climate of warmth and concern for the draftees and unfeigned interest in their life has its effect. For example, many enterprises deposit money into the draftee's personal account each month during his entire service term. An absolute majority of the fightingmen return to work at their own enterprise or farm.

I shall frankly say, however, that the attitude of "sent-off and forgotten" is still alive in certain oblast cities and rayons.

Another question: How can we involve all of the draftees in initial military training? The working youth do not always receive it, after all. And they account for more than 8% of the entire draft pool in the oblast.

As we know, the working youth have to undergo military training at one or several enterprises with at least 20 trainees participating. We do not have that many even at

large enterprises, however, and there are numerous organizational difficulties involved in combining several enterprises to set up a single training center.

I feel that the best way by far is to use the defense sports camps. We have begun doing this as an experiment in several rayons. There are problems also with this, though. The matter of taking the youth away from their jobs, let us say. Or payment for the time spent at assemblies. Where are we to find the funds to keep the people at defense sports and physical fitness camps? Those in charge of many enterprises, farms and ispolkoms of rayon and city soviets support our proposal that the military training be organized for the youth at these camps. Support is one thing, however, but we are still not receiving economic assistance.

This is why I believe we must revise a number of points in the statute on initial military training which do not conform to the present tasks and do not take into account the restructuring processes occurring in the society. In my opinion, it is long since time also to add to the staffs of the rayon ispolkoms, people responsible for promoting initial military training in the rayon.

The problem of training specialists for the Armed Forces is an ancient one.

I recall that a year and a half ago KRASNAYA ZVEZDA raised the issue of training specialists for the army and navy. The workers with the military commissariat advocated turning over all of the training to the vocational training system so that by the time a draftee graduated from the special vocational and technical school he would have both a civilian and a military specialty. No changes have occurred in the situation since that time, however. I believe that the newspaper needs to renew this discussion.

Today, when the current draft is underway, the newly elected are being addressed by officials from the oblast military commissariat, members of the oblast party and Komsomol committees, and workers from the judge advocate's office and the military tribunal.

I would be sinning against the truth, however, if I said all of the issues involved in the organization and conduct of the draft have now been resolved. That is not so. For example, we are only at the threshold of solving the problem of occupational and psychological screening. The system of studying the draftees and preparing references on them needs to be improved.

I believe that the references will be complete and objective only when those in charge of the labor collectives begin handling this matter not just as a formality, and the military commissariats supplement them with information acquired through a study of the individual youth. This is borne out by an experiment conducted by officers with the Nikolskiy Rayon Military Commissariat in rayon settlements. Our workers met and spoke with every draftee, with his parents and with those in charge of the kolkhoz or sovkhoz. They also visited the schools,

where they obtained exhaustive information from the instructors and teachers. People could see that the officers from the military commissariat were not indifferent when it came to the lives of the youth and were interested in their impending service, and they therefore candidly told about all of the difficulties encountered in educating the young people. There is no need to describe how strikingly these references differed from those we received from their places of work in industry and on the kolkhozes.

Everything has its origin, its beginning. This is true also of the organizational development of our Armed Forces, in which the human factor has the crucial role. And workers with the military commissariats have an extraordinarily large and responsible role in this matter. How well we perform our work with the draftees determines in great part the qualitative features of the army and navy, their strength and combat readiness.

Qualitative Parameters: Maneuver Defense

*18011022 Moscow KRASNAYA ZVEZDA in Russian
26 Sep 89 First Edition p 2*

[Article by doctor of military science, professor, Major General I. Vorobyev: "Capable of Movement, Mobility, Maneuver..."]

[Text] Letters to the editor show the great interest of our readers, both military and civilian, in all the activity in the Armed Forces to implement the new military doctrine. Problems tied to reconstruction in theory and practice of training the Army and Navy, also, naturally, did not escape attention. Frequently many readers ask that leaders and organizers of combat and political preparedness and military scientists be heard from more often.

Today, at our request, professor and doctor of military science, Major General I. Vorobyev, will share some thoughts with us on confirming the priority of defensive direction and tactical training of troops on whom the discussion has a bearing.

Among the terms, frequently used in recent times by specialists in tactics, and also included in the new leadership documents, could be the term "maneuver defense." Incidentally, this concept was first formulated in the field regulations of the Red Army in 1929. The term there was "mobile defense." In foreign armies the theory and practice of maneuver defense started developing much later. (In their terminology the words were movement-capable, mobile defense, arresting resistance, retreating maneuver). For instance, in the temporary U.S. Army field order such a concept appears only in 1939, in the German order "leading troops" in 1933, in the French directions on utilization of large military units—in 1937.

All pre-war field orders of the Red Army had special sections dedicated to maneuver defense. Its investigation received serious attention in military-theoretical studies. Unfortunately, the matter did not go beyond theory. In

the combat training of troops in those days, maneuver defense, just as retreat, was not practiced. The dogmas underlying the Soviet military doctrine of the day, such as "fight on foreign territory," gain victory with a "mighty blow" were understood literally.

Punishment for the miscalculations in training troops came, as we know, in the very first days of the Great War of the Fatherland. Our border divisions had to go into action with a maneuver defense. They were forced to learn it at the cost of their blood. They have gained a rich experience, but it too, unfortunately, became a forgotten inheritance. Furthermore, a distinct regression took place in our military theory—the term "maneuver defense" was banned even from military orders, which caused considerable damage to field training of troops, aided in freezing the pattern and ossifying plans in solving questions of defense.

But now, when dividing defense into positional and maneuver has been recognized as appropriate in our combat orders, one hears "what is new here, earlier it was stressed, that defense must utilize maneuver?"

Indeed, our orders always stressed throughout that in defense a high degree of maneuverability must be assured. This is understandable: Without maneuvering, no task in combat can be solved. The sense of dividing defense by appearance, calling maneuver defense a proper phenomenon today, is not to heighten the role of maneuver as such, but to give more room to commanders and staffs to creatively choose the means of achieving goals in defense. The concept of "unified defense," which ruled over us so long, acted as a strait jacket in putting in irons a commander's search before making a decision. Selection of alternative variants was limited. Willingly or unwillingly it was necessary to orient oneself in constructing a defense along the principle of "not a step to the rear." And that, as experience showed, did not always contribute toward attaining the objective, especially if there was a possibility to fully utilize the maneuver capability of troops, in order to remove them, at a critical moment, from a blow by superior forces of the enemy, to conserve their fighting capability, and, having gained time, to attain a turnaround in the course of battle. Therefore the subject does not simply deal with using maneuver but a method of action other than positional defense, whereby the defender conducts the battle along a row of echelons in depth, trying to exhaust and weaken the enemy, stretch out his order of battle, lead him into an encirclement or fire-sac and destroy him, or to create favorable circumstances for stabilization of the front in depth.

Maneuver defense should not be opposed to the positional. Both these forms of defense should be used closely together. For instance, in front of the main defensive zone, forward protective zones may be formed. Sub-units, units and large units may appear in them, depending on their mission and depth of zone. The method of solving their assigned tasks would be maneuver defense, the purpose of which would be to

create for the main defensive grouping favorable conditions to turn back the enemy's attack.

Positional and maneuver methods of action can be regarded as parts of one operation or battle in the course of their development. For instance, in the exercise Fall-88 the scenario involved the main defending force withdrawing to their rear limit, where they were supposed to take up a positional defense, while a portion of the troops of the first echelon were detailed to delay and exhaust the "enemy" in the inter-zonal space, using a maneuver defense.

It is not to be excluded that maneuver defense may have to be hurriedly adopted when, let us say, higher headquarters intended to take defensive positions along some line, but changing conditions did not allow it. Most frequently a similar maneuver variant may be possible upon a surprise attack of the enemy. For instance, in the battles of June 1941, in those cases where commanders and staffs, in spite of an extremely complex and unclear situation showed their organizational qualities and manliness, they succeeded, under the blows of the enemy, in creating a sufficiently durable defense and delaying the pressure of his superior forces. Particularly great sturdiness was shown in the first days of war by the troops of the 41st, 99th, and 124th rifle divisions of the Southwest Front.

The above having been said in general, one should note that maneuver defense can be applied on any scale by sub-units, units or large units under the most varying circumstances, and transition to it can be made as an exploitation as well as being planned in advance.

In their time opponents of the theory of maneuver defense insisted that it was in its nature not a defensive action but a retreat, and therefore erroneously considered it improper to list it as one of the means of defense. In fact, in one circumstance or another, it is permissible to abandon definite pieces of one's territory. And yet maneuver defense is far from synonymous with retreat. Their natures are inherently different as to purpose and methods of action. If the purpose of a retreat is to remove subordinate units from under the enemy's blow more quickly, swiftly break contact with him, avoid entanglement of main forces in protracted battle, then the nature of maneuver defense is to paralyze the movements of the enemy, to the extent possible hold him up at each of the succeeding phase lines with fire, counterattacks, ambush operations, creation of barriers, to bring losses to the enemy, constantly hold him under pressure. In a word, each meter of advance must be given to attackers with a battle.

A characteristic difference is also that in retreat directional movements of troops predominate, assuring a rapid movement to the final phase line (the area of concentration), and all other actions, rear-guard fire-fights, counterattacks, artillery barrages, are all of a defensive nature. In maneuver defense, on the contrary, the withdrawal of forces, the movement of from phase line to phase line plays a combat support role. The main thing here is active combat. It is conducted not only to hold defended positions but also on maneuvering in depth while defending objects in the inter-phase areas. Maneuver actions here are broadly related to holding positions. This way a "clean" march while conducting a maneuver defense, should not, by its nature, exist. Movements from line to line take place under cover of small units defending intermediate positions, actions from defiles and hasty fortifications, i.e. the enemy does not for a minute remain unopposed.

The organization of maneuver defense is rather complicated. It is usually conducted over a wider defensive zone and therefore, unavoidably, takes on a clustered character, with significant gaps between battalion zones of defense, and company and platoon strong points. Under such conditions it is very important to assure the essential tactical independence of subordinate units. This is attained through their reinforcement with artillery, armor, antitank, antiaircraft and combat engineers.

In maneuver defense one must be ready for unexpected situations at any time. The distinguished commander is he who remains on top of the situation, reacts quickly to its changes, is always in charge, keeps calm and self-controlled, at difficult moments gives his subordinates an example of unyielding manliness, does not allow disorientation and disorganization.

Such qualities do not come naturally by themselves. Much depends on how the training of troops is organized. For instance, while practicing aspects of maneuver defense, it is very important to assure precise coordination of different units and combat arms participating in the training. This applies especially to planning combat firing, bombing, etc. Under these conditions each commander must be clear not only about his own assignment but also the general scenario. Rapid and extreme changes in the situation typical for such training presuppose an ability on the part of leaders to keep on top of the events, while simultaneously applying corrections in the action of units and arms, keeping in mind their real situation on the battlefield. To develop these qualities in the officer corps, those responsible for its training must direct their efforts, if we are to seriously think of using active tactics in defense.

Development of Mi-24 Design

18010829 Moscow KRYLYA RODINY in Russian
No 5, May 89 pp 24-26

[Article by Aleksey Radin, engineer: "Implementing the Concept of the Mi-24"]

[Text] In the first half of the 1960's, Mikhail Leontyevich Mil, the designer and scientist under whose supervision the piston and gas-turbine Mi-1, Mi-4, Mi-6, Mi-2, and other helicopters were created, proposed developing a special combat helicopter for the armed forces. Many military leaders and aviation specialists received this proposal, to put it mildly, with bewilderment, some even very negatively.

A debate ensued. As its participants—veterans of helicopter building—tell it, it was quite a sharp debate, for it involved a technically quite complex and long-term program, the end result of which was not clear to everyone.

The opponents of M.L. Mil, in principle, favored building a new type of helicopter for the army. The military conflict in Korea in the 1950's and a number of military exercises had shown the effectiveness of these aircraft in combat operations when used for transport and liaison, evacuating wounded, conducting reconnaissance, and adjusting artillery fire. The helicopter is proving its worth for these and similar purposes, said the opponents of the new program, but it is simply utopia to build a helicopter for use on the battlefield, where armored tanks reign on the ground and above them—swift supersonic aircraft with powerful armament. It is perfectly obvious that the likelihood of a helicopter surviving in the skies of a modern battle, even for a short time, is close to zero.

The opponents of developing and putting into service a specialized helicopter justified their negative attitude with, at first glance, quite convincing comparisons and examples.

Is it logical now, in the 1960's, to offer the armed forces for use on the battlefield a helicopter having a speed that is nearly 10 times less than that of a modern airplane which it will encounter when carrying out its mission, and armor that is 20-25 times thinner and weaponry caliber that is 10 times less than that of the tanks it is supposed to attack? Do the designers really believe that the crew of the helicopter they are proposing will have even some chances of carrying out a combat mission and surviving in contact with such enemies?

The success of an attack even on infantry subunits is doubtful. The thing is, besides the usual barreled weapons, let us say, as dangerous to a low-flying helicopter as a large-caliber machinegun, they also have portable surface-to-air missile systems. Equipped with missiles that have infrared homing heads, they are capable of destroying even supersonic aircraft, and your machine can develop a maximum of 300 km/h. It is no

coincidence, the opponents emphasized in conclusion, that they are not building combat helicopters abroad. They simply do not make sense for them.

Such statements corresponded to the level of military knowledge and the views on the capabilities of helicopters of the early 1960's. But, as time would show, M.L. Mil and his supporters were looking farther and assessing the prospects of a future helicopter and the probable forms and methods of its combat employment in accordance with those tactical and technical capabilities which the machine they proposed would possess. Convinced that their concept was right, they began its practical implementation.

Time and Experience Confirm

In order to be convinced of how farsighted, both in a technical and military-technical respect, the concept of the Soviet supporters of a special "battlefield" helicopter in the 1960's was, suffice it to page through the foreign aviation journals of the middle of the next decade. The materials published in them by military and aviation specialists and journalists indicate that the combat helicopter was to an ever-increasing extent becoming one of the main types of defensive weapons of modern army formations.

Theoretical articles, descriptions, and photographs of helicopters of NATO countries—the Cobra, Apache, and others—and examples of their employment during various exercises and "small" military conflicts take up a great number of pages. The authors note the high effectiveness of specialized combat helicopters and emphasize their increased survivability compared to other types of vehicles and the special ability to make surprise attacks on targets and to withdraw from retaliatory attacks. To do this, in particular, their crews use minimum flight altitudes for approaching the target and attacking, and near the ground (0-15 meters) the radars "see" the target poorly and missiles with IR-homing heads lose their effectiveness.

A helicopter's unique ability to change flight speed rapidly from maximum to zero, fly sideways and backwards, sharply maneuver right at ground level, and use the terrain relief for cover reduces its vulnerability. It is no coincidence that a prominent French general once called the combat helicopter the "king of the skies near the ground."

In foreign countries they wrote particularly often about the role of combat helicopters in operations against mobile tank formations. In particular, in the summer of 1980 the American journal ARMY AVIATION DIGEST recounted such an operation, referred to by the press as the model for NATO armies. These articles disclosed the actual attack and defensive capabilities of the combat helicopter in general and, in particular, its chances of "surviving" over a modern battlefield, which M.L. Mil's supporters were saying almost 2 decades ago and which opponents of the program to create such a helicopter denied.

The actions of a helicopter unit in a "model operation," judging by their descriptions in Western journals, take place roughly like this.

...After receipt of the order to stop the advance of enemy tanks heading for an important center of defense, a group of helicopters flies over to the attack positions in the area where the enemy will likely pass. The command helicopter flies out for reconnaissance. Using topographic features, the helicopter flies at treetop altitude. This prevents enemy aircraft from detecting the reconnaissance helicopter and, if detected, minimizes the possibility of an effective attack, since guided missiles are not very effective in the "skies near the ground." When attacking with cannons or rockets, the fighter pilot has to dive at the target, which is able to change altitude and speed sharply right down to zero, deviate in any direction, and go behind ground cover. Any maneuver by the airplane at minimum altitude threatens a collision with the ground. The helicopter crew, deviating from the attack, can send a guided missile in pursuit of the aircraft breaking away and shoot it down. (The press has had reports of such an unfavorable outcome of an air battle for the airplane.)

Using the technical capabilities of their helicopter, hovering, the crew observes the approaching tanks, for example, by hiding behind the crowns of trees, behind some hill, or simply behind a building. If further observation of the tanks is necessary, the reconnaissance helicopter secretly changes its position. After assessing the situation, the commander relays an order to his group to fly to an area enabling them to attack the enemy from various directions and at effective fire distances for the helicopter antitank guided missiles (ATGMs). As soon as the tanks and the air defense assets accompanying them enter this area, the helicopters execute a vertical takeoff above the cover (a so called "pop-up") and launch the guided missiles against targets allocated in advance among the crews.

Since the effective range of certain types of ATGMs exceeds the effective range of antiaircraft barreled artillery, the helicopter crews, "pressing" their helicopters right to the ground, attack the targets without entering the air defense danger zone. The target hit probability of helicopter ATGMs is very high—up to 90 percent. After launching the missiles, the helicopters immediately take cover and fly to new, pre-selected positions for a repeat attack.

In the event helicopters going on a mission unexpectedly encounter mobile antiaircraft guns or infantry subunits having man-portable surface-to-air systems, the crews bring into action the onboard swinging machinegun mount and missile IR-seeker "deception" devices, and quickly depart the danger zone. Cockpit armor and bulletproof glass protect the crew from infantry small arms.

In analyzing the results of a number of maneuvers and exercises conducted by NATO forces, military experts

emphasize that the ratio of losses in operations of helicopters against tanks, as the magazine *INTERNATIONAL DEFENSE REVIEW* noted, in particular, varied from 1:12 to 1:19 in favor of the helicopters.

Overall, in the late 1970's, under the pressure of the facts, M.L. Mil's opponents admitted the effectiveness of combat helicopters and, in particular, their high "survivability" when carrying out basic missions over the battlefield. The designer's ideas by elements began to be implemented in practical decisions.

Natural Development of the Concept

The collective of the experimental design bureau headed by M.L. Mil became one of the first to conduct experiments on using the helicopter as a platform for guided missiles. (ATGM launches were made from the Mi-1.) It was the first to introduce a built-in machinegun mount as an organic weapon (on the Mi-4 helicopter). Therefore, the appearance of the prototype Mi-24 Soviet specialized combat helicopter in the skies in the late 1960's was a natural stage in the development of the advanced concept. What was this helicopter like?

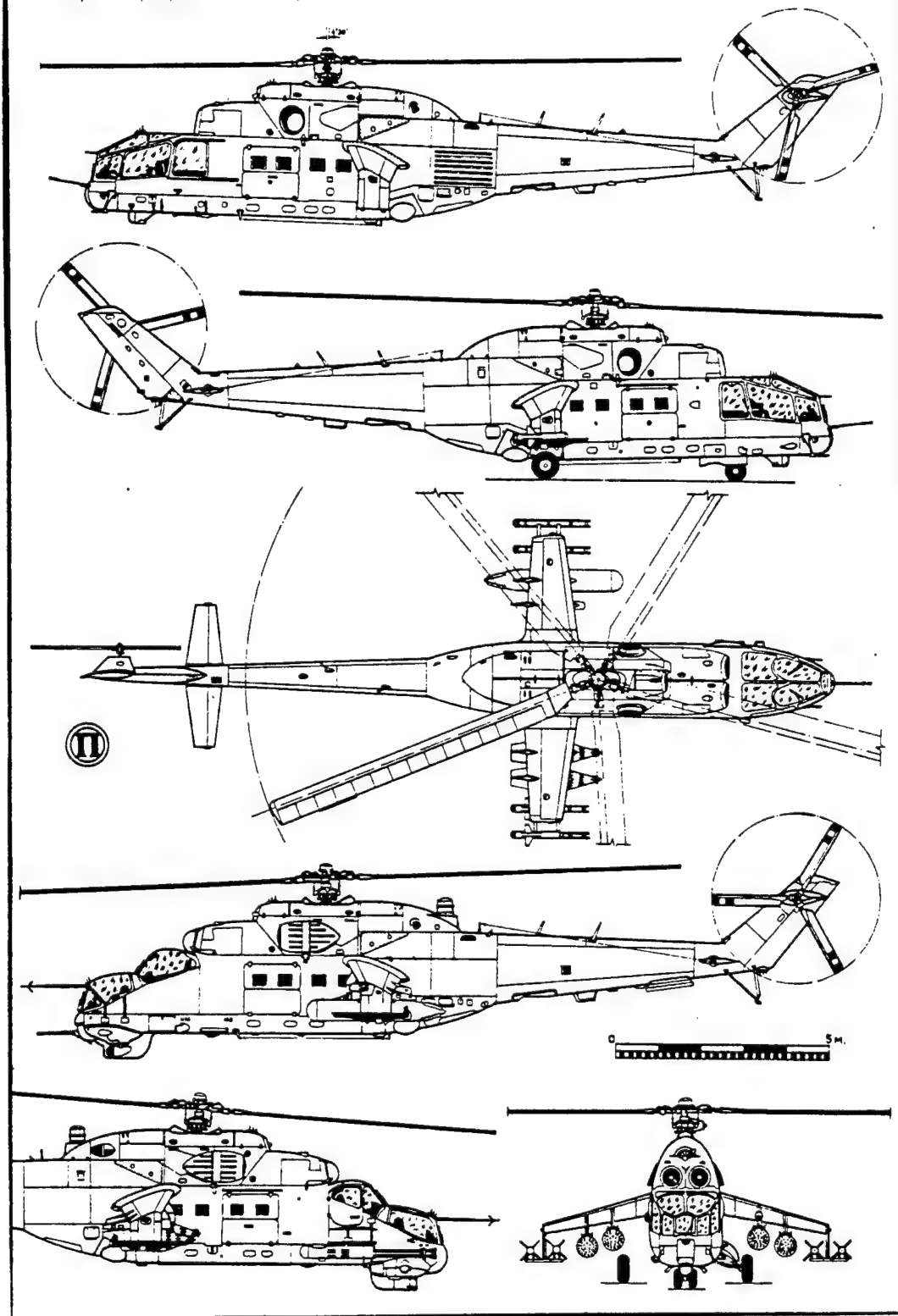
The Mi-24 prototype was a classic single-rotor design helicopter with two turbine engines. Based on studies conducted, the design bureau collective and its leader considered this design optimal for a combat helicopter, including from the standpoint of survivability in combat. If one of the engines are damaged, the crew can in principle, continue to carry out the combat operation. Flight is ensured by the second, automatically switched to maximum power mode. If both engines fail, the helicopter, possessing excellent autorotation qualities of the main rotor system and good directional controllability during autorotation, provided by the tail rotor which continues to operate, could make a landing even on a small landing pad. If the tail rotor is lost, it can continue flying with forward speed and execute a landing like an airplane.

The booster elements of the main rotor control system, relatively more powerful than twin-rotor helicopters with the same weight, make the single-rotor design more preferable for combat survivability. M.L. Mil considered the slight increase in the lateral area of the helicopter at the expense of the tail boom to be insignificant. It is not likely that anyone would deliver aimed fire specially at the boom, which is narrow compared to the fuselage, and at the tail rotor power drive passing through it, since the hit probability is very low.

Designers of combat helicopters in the West were apparently also guided by similar considerations later on. All the existing helicopters of this sort, for example, the Huey Cobra, Apache, and Mangouste, as well as those being newly designed, are built or being built using this design.

Unlike his previous helicopters, M.L. Mil rearranged the work stations of the two crew members on the Mi-24, one behind the other. This reduced aerodynamic drag

Чертежи разработал Г. Петров, г. Ленинград.



and at the same time decreased the likelihood of both of the flight crew being hit simultaneously from the most dangerous direction—from the front. Now this seating configuration of helicopter crews has become practically universal.

A cabin designed for several riflemen is located behind the flight crew cockpit. Its specially designed doors enable the riflemen to abandon the helicopter quickly on landing. Both cabins have sufficiently powerful armor to protect the flight crew and the assault troops from small-arms fire and shrapnel. The helicopter has dual controls to increase its "survivability" in combat. If the commander occupying the rear seat is wounded, the weapon operator seated in front assumes control of the helicopter.

The Mi-24 helicopters are equipped with the most modern machinegun and missile armament. There are hardpoints on the short wings for four rocket pods. Aviation bombs can be mounted in place of them. There are hardpoints at the ends of the wings for guided missiles (ATGMs). The nose section of the flight crew cabin has a swinging machinegun mount—a large-caliber machinegun. At each window in the cabin for the assault troops there is a pin mount which can be used to fire personal weapons directly from onboard the helicopter.

The appearance in the skies of the Mi-24 prototype and especially its subsequent series-produced variants aroused a large amount of interest on the part of the world aviation press. Based on conversations with specialists, especially military, who were invited as observers to various exercises and maneuvers of Warsaw Pact forces, foreign journals have published and are publishing quite a bit of material about this Soviet helicopter and photographs of it. This heightened interest in the Mi-24 is natural, since its creation was indeed a new step in world helicopter building, particularly military helicopter building.

One of the special features of the Mi-24 is its speed. It was and still remains to this day the fastest combat helicopter. In 1978, a similar helicopter, given the designation A-10, set the absolute, officially recorded world speed record for "clean"* helicopters—368.4 km/h. Such high speed qualities have been achieved thanks to good aerodynamics, in particular, by using retracting landing gear.

Mikhail Leontyevich Mil died in 1970. His concept of a battlefield helicopter, realized under him only in the initial stage, was continued and developed by his comrades in arms and students led by chief designer Marat Nikolayevich Tishchenko. In the time that passed since the first flight of the Mi-24 prototype, several modifications were developed based on the basic model. In the modifications, the designers used new achievements of aviation science and technology to make the helicopter conform to the increasing requirements of the times.

In the lower photograph [not reproduced] is one of the variants of the Mi-24 with a considerably changed cabin

configuration. In particular, its rear portion is raised above the front portion. This improved considerably the view for the crew commander. A four-barrel machinegun in a special nose turret has been installed in place of the single-barrel machinegun. The gunsight system has changed. The tail rotor is positioned on the opposite side of the tail fin. The engine air intakes are equipped with dust protectors. To reduce IR-emission, the nozzles are closed by so-called exhaust baffles. Other changes have also been made to the helicopter. Altogether they have made it possible to increase its combat effectiveness considerably.

According to the experience of development and daily operation of the Mi-24, virtually every modification surpassed the initial prototype in some way. Although they differ considerably from the first helicopter, both outwardly and, more importantly, in combat effectiveness, they retain the first designation. The first model of the Mi-24 helicopter held a special place in the history of helicopter building, namely that of the "father" of a family of specialized combat helicopters.

Footnotes

*Without additional engines providing horizontal thrust (turbojet engines, air propellers, and so forth).

COPYRIGHT: "Krylya Rodiny", 1989

Specifications, Performance of Su-27

18010878 Moscow KRYLYA RODINY in Russian
No 8, Aug 89 pp 25-27

[Interview with Mikhail Petrovich Simonov, chief designer at the Experimental Design Bureau imeni P.O. Sukhoy, by Yevgeniy Pavlov, KRYLYA RODINY correspondent: "An Aircraft of the 21st Century"]

[Text] *One could write a novel, or at least a good-sized story, on the history of almost every aircraft in our time. Conflicting judgments and opinions, rejected solutions and unexpected finds, the crash of illusions and persistent striving for the planned goal—this is by far not a complete listing of the "drama of ideas" played out when creating a modern aircraft.*

Still, what took place during the process of designing, building, testing, and finishing the Su-27 fighter-interceptor can hardly be set forth in some known literary genre. Unless...it was in a detective story! Maybe someone will develop such a concept of material, but in this article, due to the lack of space, we will limit ourselves to individual fragments of this by no means standard history.

Our correspondent Yevgeniy Pavlov talks with M.P. Simonov, chief designer at the Experimental Design Bureau [OKB] imeni P.O. Sukhoy. He was chief designer of the Su-27 during the years it was being created.

[Pavlov] Mikhail Petrovich, in the early 1960's, after the air show at Tushina, which unfortunately turned out to

be the last one, the mass media in the West published an article under the garish headline "Sukhoi—The Designer Comes out of the Shadows." In particular, the article reported certain information on the new aircraft of that time—the Su-7B fighter-bombers and the Su-9 and Su-11 fighter-interceptors. The situation this year is turning out to be similar—the OKB imeni P.O. Sukhoi is again coming "out of the shadows." Combat equipment with the "Su" marking is being displayed for the first time at the Paris International Air Show...

[Simonov] We did not like the title of the article very much. It was based on the incorrect conception that Pavel Osipovich [Sukhoi] was being "suppressed" and not allowed to work, and therefore his supersonic aircraft appeared later than other Soviet aircraft. In actuality, it was all different. Not inclined to making a show of his successes, self-promotion in today's language, the founder of our firm carefully gathered "under his wing" designers who were talented and, I would say, bold in their aspirations. The level of technologies they developed for creating new models of aircraft, as a rule, outpaced both foreign and domestic experience. According to the traditions of that time, the best aircraft became closed to the foreign aviation public and even more closed to our fellow-countrymen. Only this can explain why any information about our aircraft is to this day perceived as a sensation. Now the situation has changed. We are moving closer to a "glasnost parity" in the area of information on combat equipment developments. That is, we are striving to report in the press and display at shows no less than the NATO countries do under similar conditions; but at the same time, no more either. I am ready for a candid conversation about the Su-27, an aircraft that was far from easy for us to achieve.

[Pavlov] That is very intriguing, Mikhail Petrovich. I will refrain from asking you questions for now...

[Simonov] From the very beginning of designing, the Su-27 developed as a fighter-interceptor without any capability of operating against ground targets. The American F-15 Eagle fighter was taken as the starting point—a "rival." Its data were put into a computer and played through in competition with our initial design model. We obtained the ratio of 1.35:1. In accordance with the adopted concept, we began building the T-10 aircraft. This was the first "unstable" fly-by-wire aircraft in the Soviet Union. In Western terminology, this is an aircraft with aerodynamics determined by the parameters of the control system, or an aircraft with electronic stability. The American F-16 was the first such aircraft. An ogival wing with a blunt strake and deformation of the middle surface were included in the integrated aerodynamic design developed jointly by the aerodynamics department of our OKB and the Central Aero-Hydrodynamics Institute. In the summer of 1977, our design bureau's chief pilot, Hero of the Soviet Union Vladimir Sergeyevich Ilyushin, made the first flight in the T-10, and testing began. All went well, and 10 more aircraft were begun...

The chief designer did not pause, and I did not interrupt him. But what you are now reading back then resounded like a bolt out of the blue for the customer—the Air Force and Air Defense. But it was much louder in the Ministry of the Aviation Industry.

[Simonov] Now it is difficult to ascertain where the mistake was made—whether we were misinformed in analyzing the capabilities of the competitor, or whether we ourselves did not believe in the reliability of the reported capabilities of the F-15. But one day, having soberly weighed everything and having input the updated data into the computer, we obtained a reverse ratio—we were losing with a result of 1:1.35. Having fulfilled all points of the technical task, we made a mediocre aircraft. It did not conform to the world level either in range or maneuverability.

[Pavlov] So, it was a typical scandal of the "times of stagnation"—the project conforms completely to the technical task, raises no doubts with the customer, and the ministry is ready to report on the next victory of Soviet scientific and technical thought, but...the engineer suddenly turns everything upside down, beats his chest, and states that everything must be started from the beginning.

How did events develop further?

[Simonov] Then-Deputy Minister Ivan Stepanovich Silayev gave us a lot of support. But there was a total lack of understanding on the part of Minister V.A. Kazakov. We stood firmly on our positions and by the time the issue was resolved we were armed with a new concept, returning us to the starting positions of superiority over the competitor. That is, our plan for a new aircraft was ready, although under the same name. We also kept within the deadlines for putting it in service, although this required considerable efforts. Stanislav Kashafutdinov, an aerodynamicist from the Siberian Scientific Research Institute of Aviation, made a large contribution to this.

[Pavlov] The fact that the series-produced Su-27's differ from the T-10 prototype on permanent display at the Moninskiy Air Force Museum is readily apparent to the aviation enthusiast. However, since you mentioned changing the concept of the entire project, could you dwell on that in more detail?

[Simonov] First of all, we decreased the mid-section by 20 percent. Anyone who is familiar even with the rudiments of designing will know what this means. It turned out that the ejection seat designed by Gay Severin and the wheels of the side landing gear struts remained from the previous aircraft. Everything else was done over.

Next came the wing. It is totally different on the series-produced Su-27. The wingroot strake now has a sharp edge. The leading edge of the wing is straight and has an adaptive slat its entire span which operates in conjunction with the flaperons. The electric-command system commands all this equipment, as if its channels are

spread out to ensure combat survivability of the aircraft. If the readings of the channels differ, the system obtains a "quorum," and the "inaccurate" channel is disconnected. That is why the reliability is so high.

The position of the nose gear has been changed. On the prototypes, worried about high loads on it, we positioned it closer to the nose. Taking radical steps, we reinforced the strut and moved it more to the rear. As a result, maneuverability on the ground has increased. The aircraft turns around practically in place. The new position of the strut is favorable for reducing the likelihood of foreign objects from the runway getting into the engine air intakes. Grids installed in the air intake ducts also serve to protect the compressor blades. They retract at cruising flight.

[Pavlov] Mikhail Petrovich, one of the visible differences between the prototype and the series-produced aircraft is the configuration of the tail fins.

[Simonov] The aerodynamics of the Su-27 are, to a considerable extent, vortical. The vortices generated by the leading-edge wingroot extensions serve to increase the efficiency of the control and stabilizing surfaces and to prevent boundary-layer separation at large angles of attack. As I already said, the wingroot extensions on the T-10 and the Su-27 are fundamentally different. And the positioning of the tail fins is chosen accordingly. It can now be said that our tail fins are positioned where they should be. But it should be noted that vortical aerodynamics are very complex. During the process of testing and development, we, figuratively speaking, "pulled" the tail fins all over the aircraft.

[Pavlov] Could you say a few words about the aircraft's power plant?

[Simonov] The collective of the OKB imeni Arkhip Mikhaylovich Lyulka, and during the development of the AL-31F engine simply its design bureau, was our colleague and thought like us in spirit and in the approach to designing the aircraft. They have designers working there who are willing to take a risk using the most modern technologies. The AL-31 is the first bypass engine of this class in the Soviet Union. It is at the highest level of world achievements for specific parameters, as all developments of this design bureau were at one time.

[Pavlov] Mikhail Petrovich, you talked about the courage of those who took on the risk of the development and at the critical point assumed full responsibility for the failure...

[Simonov] I see. It is also time to talk about those for whom risk, courage, and a willingness to devote their lives to learning the unknown—categories deprived of any literal sense. I am talking about the test pilots of our design bureau... Yevgeniy Solovyev. Back then, we still did not know how the frequency responses of control match the human capabilities. Zhenya [Solovyev] ended up in a resonant mode and was killed, and the aircraft

was destroyed. The "black box" remained intact and accurately recorded the tragedy. This helped us to correct everything immediately.

Then another aircraft was lost. Aleksandr Komarov perished.

We searched for a long time for the cause of this accident. Everything finally became clear after a unique flight by Nikolay Sadovnikov, in which a large part of a wing panel flew off at extreme operating conditions. It turned out that we underestimated by severalfold the design hinge moments introduced when designing the adaptive slat. During wind tunnel tests, there are errors that are usually corrected by introducing correction factors. In our case, the model effect gave a compound error. It also resulted in Komarov's death.

However, getting back to Sadovnikov's flight. Located in the cockpit of an aircraft with part of the wing torn off, he already had his hands on the ejection seat levers. Suddenly, by some feeling characteristic only of such extraordinary pilots, he understood that the plane was settling down. He left the ejection detonator alone and brought the aircraft to altitude. There he understood that he could control it and even land. The Su-27, obeying the will of the master, actually landed with one wing. When information about a similar incident with an F-15 Eagle appeared in Western journals, we were not surprised. But the main result of Sadovnikov's courageous act, bringing the damaged aircraft to the airfield, was that the causes of Komarov's accident became completely clear. One of the versions given by the accident board was confirmed. Since then, there has not been a single accident due to technical reasons in a series-produced aircraft.

Let us give the chief designer credit—this is the first time we have had such a candid discussion, at least on the pages of our magazine. We would remind you that M.P. Simonov is reporting on the testing of the first domestic aircraft, and the second in the world, with electronic stability, that is, on a limited area separating skill and experience from uncertainty.

[Pavlov] Mikhail Petrovich, the Western press is extensively commenting on the two-seater Su-27UB combat trainer, viewing this aircraft as a turning point in our country's air defense. What has caused this special interest? After all, before all "Su-type" combat aircraft were also built in the two-seater version...

[Simonov] There is a significant aspect in this case. The Su-27UB is classified as a combat trainer only by tradition. Unlike most "trainers," it retains all weapons and weapon control systems. The customer decides which aircraft to have in the inventory—the single-seater or two-seater. For example, the two-seater interceptor is more acceptable for guarding our country's northern borders. The psychological climate on board is significantly better when a two-man crew controls an aircraft on patrol over the freezing sea. I think this is understandable.

[Pavlov] Two years ago, Western journals gave extensive coverage of photographs taken at close range of a Su-27 with its speed brakes extended...

[Simonov] I hope that from now on such an incident will become impossible. I have in mind the "Agreement on Preventing Dangerous Military Activities" concluded between the USSR and the U.S. governments. Here is what happened at that time. A NATO Lockheed "Orion" reconnaissance aircraft was observing a group of Soviet warships. Our Su-27 was making a practice intercept. The crew of the "Orion" decided to drive our interceptor away from this area. To do this, they slowed down to minimum speed and began to intersect our aircraft's course, and then began to "fall" on the Su-27's back. The commander of the "Orion" failed to take one thing into account—the minimum speed of the Su-27 is lower than that of the "Orion." In short, the Soviet pilot accepted the challenge and continued flying under the belly of the reconnaissance aircraft at low speed. In so doing, the pilots of the "Orion" lost the Su-27. As a result of the reconnaissance aircraft's dangerous maneuver, the two made contact. The "Orion's" propeller "cut" the radio-transparent fin tip of the interceptor. The reconnaissance aircraft was not so lucky. Fragments of the propeller pierced its fuselage, an engine started smoking, and the "Orion" headed toward the coast.

[Pavlov] Thank you, Mikhail Petrovich, for the interesting talk. We hope to learn more details after your pilots return from Le Bourget...

[Simonov] We will be sure to talk.

Su-27 Technical Information

The single-seat, two-engine Su-27 fighter-interceptor was developed by the OKB imeni P.O. Sukhoy and is intended for intercepting air targets.

The modern aerodynamic configuration, powerful and economic turbojet bypass engines, large fuel load, wide altitude and speed range, highly efficient electronics package, and modern guided missiles make the Su-27 irreplaceable for carrying out missions of intercepting air targets.

A high thrust-to-weight ratio, an electronic remote control system with limiting of the angle of attack and maximum g-load, adaptive wing mechanization, a weapons control system using electrooptical radar and a helmet-mounted target designation, powerful missile armament, and a built-in cannon enable the Su-27 fighter-interceptor to confidently conduct close-range, highly fluid air-to-air combat.

The two-seater combat trainer, designated the Su-27UB, retains all the combat capabilities of the Su-27 and provides an excellent view for both cockpits.

The record-holding version of the Su-27 interceptor, designated the P-42, set 27 world records between 1986 and 1988 for rate of climb and level flight altitude.

Armament Control System

It has a coherent pulse-Doppler radar, electrooptical radar, and a helmet-mounted target designation system.

Armament

It has 10 air-to-air guided missiles and a built-in 30mm cannon.

Specifications		
	Su-27	Su-27UB
Takeoff weight, kg:	22,000	22,500
	normal	
maximum	30,000	30,000
Thrust-to-weight ratio at takeoff	1.1	1.1
Maximum Mach speed	2.35	2.35
Service ceiling, meters	over 18,000	18,000
Maximum operational g-load	9	9
Maximum flight range, km	up to 4,000	3,000
Length of takeoff roll, meters	500	550
Length of landing roll, meters	600	650
Engines:	25,000	25,000
2 AL-31F turbojet bypass engines with total thrust of		

COPYRIGHT: "Krylya Rodiny", 1989

Plan For Aviation Fuel Supply Plagued By Irrationalities

18010891 Moscow KRASNAYA ZVEZDA in Russian
13 Sep 89 First Edition p 2

[Article by Senior Lieutenant V. Shurygin: "Reader Poses A Question: 'Excess' Fuel."]

[Text] Moscow Air Defense District—The regiment never flew. The commander spent his evenings planning the next flight-operations shift in vain, for his plans remained on paper. The reason: no aviation fuel. The subunits under Lieutenant Colonels A. Guryev and O. Bezus were grounded for two weeks. And the list goes on. In some instances, aircrews completed only two or three flight-operations shifts during the entire month.

What accounted for this situation? What happened to the aviation fuel?

"Who told you there isn't any fuel?" asked a surprised Major A. Litvinov, an officer of the district aviation engineering service. "No flights' doesn't mean the same thing as 'no aviation fuel.'"

And a paradoxical picture emerged.

Deliveries of aviation fuel are based on the general plan for flight-hours to be logged by the regiment's fighter aircraft during the year. In other words, for every hour of flight time, a corresponding number of tons of aviation fuel is allocated. Everything would seem to be in order.

But what happens is this. The airfield lacks the space to store the annual fuel supply. It has to be delivered in regular installments. But flights depend on the weather, the level of pilots' training, the specific nature of their missions, and much more. But these subtleties are not taken into account in supplying airfields with aviation fuel. For a long time, the preference has been for a very primitive system. The fuel (in tons) is simply divided by the number of quarters and months. True, weather conditions and tasks to be accomplished during the training period are taken into account, but in the most averaged-out form. As it turns out, then, suppliers, guided by their plans, dispense their fuel regardless of whether the aircrews need it at the time in question or not. Yet the crews can consume that fuel only within the limits of the planned allotments.

In the case in question, there was aviation fuel, but it was from "another" allotment, as the aircrews had already used up their allocation for the quarter. In short, a closed cycle emerges in which the more the fighter pilots fly to improve their skills, the greater the risk that they will be "grounded." For the umpteenth time, paperwork takes precedence over actual practice.

Where's the solution? Major Litvinov only shrugged. Fuel deliveries are not within the competence of the USSR Ministry of Defense. And for the time being the country's planning agencies are more attentive to the Ministry of Civil Aviation.

On the subject of the allocations, one can't help asking the following question: where do the figures come from, what are they based on? The district aviation engineering service explained that they are based on scientifically substantiated calculations. For the MiG-25 aircraft, for example, fuel consumption amounts to 10 tons in the air and 3 and 1/2 tons per hour of operation on the ground. The figures also take into account the average ratio of aircraft operating time in the air and on the ground. In this way, an overall figure is arrived at. We should note that the ratio of time spent by the fighter in the air to operations on the ground (with engines on) is approximately 3:1. In other words, every fourth minute the aircraft is "flying" (in terms of fuel) without ever leaving the ground.

The allocations are nonetheless calculated incorrectly. Practical experience offers proof of this. For the allocation should also include all ground work (such as fueling, testing, and the daily fueling of aircraft on alert duty), which consumes nearly 700 tons of fuel per year. It should also include such utterly ignored consumers of

fuel as heaters and the emergency fueling of the entire regiment's aircraft in response to some irregularity that may be detected.

Needless to say, efforts must be made to solve the problem of calculating allocations. Yet we can and must conserve fuel right now, to prevent overconsumption. In practice, however, the battle to conserve fuel is often waged in a perfunctory fashion. Take, for example, the beginning of flights. One after another, the fighters leave the parking space, taxi onto the runway, and abruptly take off into the sky. In terms of time, the first flight is the longest, because each fighter, unless it has flown at maximum altitude, has to burn off excess fuel in the flight zone. For the aircraft are kept at the airfield with a 100 percent fuel supply, though most exercises require less. The MiG-25, moreover, has limitations on landing weight. And so the pilot has to fly back and forth aimlessly in order to burn off his "excess" fuel.

Lieutenant Colonel E. Dmitriyev, a specialist in the aviation engineer service, has calculated that 1 and 1/2 to 2 tons of fuel per fighter is burned up to no purpose per shift, on average. In the course of a year, then, this amounts to nearly 2,400 tons.

And now let me cite a figure for whose accuracy the officers of the district air force staff who calculated and verified it will vouch. A total of 64 percent of all fighter aircraft flights are for combat purposes. In other words, 36 of every 100 times the missile-armed aircraft takes off into the sky it is on flights that have nothing to do with testing its combat capabilities. And if we also consider flights by dual trainer fighter aircraft, the percentage increases to 46. This figure includes flights by aircraft serving as targets, flights made for various support purposes, and others. The average flying time for one interception currently stands at two hours. Meanwhile, the interception itself takes 55 minutes.

Herein lies the chief untapped reserve for conservation, a reserve that, according to the most conservative estimates, would make it possible to conserve a minimum of one-fifth of the total annual allocation. If we were to combine this with more "minor" reserves, we could conserve and set aside for combat training every fourth ton.

But how? We can't swear off support for combat operations, and if you don't have an aerial target there's nothing to intercept. And here it bears recalling that the MiG-15-UTI used to be in service at our airfields. That training fighter was an excellent supplement to our combat aircraft. The training fighter was more economical for practicing piloting skills and for regaining one's skills after a break from flying. However, the airfields "lost" the MiG-15-UTI when the aircraft was taken out of service. But the jet-engine L-89 training combat aircraft is used in our country. It is maneuverable and economical to operate. Judge for yourself: One fueling of a MiG-25 is enough for 10 to 12 flights of equal duration by an L-89.

Here, for example, is the opinion on this score of Air Force Lieutenant General O. Anisimov, Chief of the Moscow Air-Defense District air arm:

"We need L-89 subunits for our MiG-25 regiments like we need air. They not only save thousands of tons of fuel but also offer a solution to problems having to do with practicing complex piloting skills and maintaining a high degree of aircrew precision flying ability—problems that are so critical for this type of aircraft."

Senior Inspector-Pilot Colonel Yu. Shevtsov sees another aspect of the matter, a psychological one:

"The L-89 would help solve such a sensitive problem as the fate of pilots who have been grounded from supersonic flight for various valid reasons."

Yes, the L-89 could not only serve as a target in cross-country flights and be used to provide support for combat operations; it could also be used to intercept low-speed, low-altitude targets, which are currently a problem.

Needless to say, a good many questions will arise that will have to be solved concurrently. There will be additional problems where material and technical support is concerned, new crews, flight safety concerns, and so forth. However, it is not difficult to have the L-89 serviced by the regiments' technical-maintenance units, and the technicians for this type of aircraft are sergeants serving their compulsory service terms. (This has to do with the personnel aspect.)

Opponents of this idea speak of the high cost of training combat aircraft. But how much more expensive it is to burn off fuel and use up our interceptors' service life to no purpose! In my opinion, the figures can hardly be compared.

Warrant Officers Replace Officer as On-Board Flight Engineers

18011014 Moscow KRASNAYA ZVEZDA in Russian
22 Sep 89 First Edition p 1

[Article by Major V. Fefelov, deputy commander of a helicopter squadron for flight engineer service, Transbaykal Military District: "Should a Warrant Officer be an On-Board Engineer?"]

[Text] In the past, duties of a flight engineer of a helicopter were held only by officers. But with time warrant officers began to be appointed, after appropriate preparation, having passed ground and flight stages of training.

At first, simply put, they were treated guardedly. Earlier, warrant officers entered flight crews only as mechanics or radiomen. But time passed, and more and more warrant officers' names appeared among the best flight engineers. The colleagues' treatment of this category of specialists also changed.

Warrant officers, as a rule, come to the duties of flight engineer after a working stage aboard a civilian-type aircraft, practical work experience as an aviation mechanic, and also with a engineer-mechanic's diploma. Having become a flight engineer, such a specialist personally performs all the work on the helicopter, beginning with the correction of minor defects and ending with replacement of major assemblies. He also keeps in mind a condition. In case of unsuitability, he may, for a lawful reason, be transferred to the duties of a ground mechanic. This is a loss not only of the romance of work in the sky, but of the flying pension and other material and moral advantages.

Based on all this I can say with complete assurance: any warrant officer values the duty of a flight engineer of a helicopter very much and carries out his duties, in part, better than his officer colleagues. And let aviation engineers not take offense at me, but personally, I would take a squadron with pleasure, where all positions of flight engineers are taken by warrant officers. I would leave officers only in posts of chiefs of maintenance units of flights and deputy commanders of squadrons for aviation engineering service.

Now briefly about why the profession of flight engineer has lost prestige for the officer. Here it is much more complicated. When flight engineers were trained in military aviation technical schools, all went well enough. For instance, Kharkov Military Aviation Technical School graduates partook of the overall glory of the Air Force. The ruling principle on military airports in those days was "all duty time—to aviation technology." And young lieutenants were included in this pattern of work. Even military occupational titles used to be "engineer-lieutenant", and then "lieutenant of engineering services." It is true that later they were changed with the explanation that there was concern for raising the officers' prestige.

Later nearly all military aviation technical schools were transformed into schools of higher learning, started graduating engineer-mechanics. These graduates started immediately to regard the duties of a flight engineer as temporary, and did not seek engineering duties. Naturally, such temporaries did not become true masters of a helicopter.

And about another feature of the officer flight engineer's duty: if for some reason, (negligence, lack of discipline, unsuitability for flight work, etc.), he is removed from the helicopter, he almost immediately gets a promotion in type of work because his first earthbound duty is chief of the maintenance unit of a flight! That is quite a paradox.

Why do I write about this? Because we received a directive from higher headquarters to remove all warrant officers from flight engineer duties. I cannot accept this decision either in my head or in my heart. Even more so I cannot accept it as an aviation specialist. After all, these warrant officers, like officers, were trained in military

aviation-technical schools. They are given the diploma of engineer-mechanic and they have the legal right to perform the duties of a flight engineer of a helicopter. I am also amazed by the fact that for these duties they leave officers, who not only do not wish to work in flight mechanics, but do not wish to serve in the armed forces, which they wrote about in their reports.

As a result of such a "reform" our sub-unit lost two wonderful flight engineers—Senior Warrant Officer V. Konovalov and Warrant Officer N. Kuyav. Both finished Kirov military aviation-technical school, have 7 years each of work experience as flight engineers, have demonstrated their excellence as specialists, and went through the severe school of Afghanistan.

Commanders entrusted to Senior Warrant Officer Konovalov, for instance, the most responsible types of work: rebuilding of technical parts, exchange of basic assemblies of the helicopter, and special assignments. And everywhere he honorably justified the trust in him. Commissions of all ranks, inspecting the helicopter serviced by Vladimir Ilyich, unanimously evaluated its condition with the highest mark. Every year the warrant officer logged flying hours far in excess of those logged by many flying engineer officers, without any equipment failures or in-flight near-failures on his account.

And he, just as the other exemplary warrant officer, was relieved of flying engineer duty and both were assigned as flying radio operators, who usually are soldiers and sergeants on short terms of service. Where is the statesmanlike approach?

I understand there is an on-going reduction in armed forces, which is not a simple process. All the more, it is inadmissible to rush through it. Considerable national resources were spent on the training of this category of warrant officers. These people are strong and ready to contribute to the increase in the defensive powers of our fatherland.

Warrant officer N. Perfilyev also had to give a report about his relief from duty. He is an excellent aviation armorer, and his former post is now occupied by a "representative" of a sports company. How can you explain it all? Why do we throw to the four winds good, experienced aviators so lightly, when we sometimes leave in the army people who cannot or simply do not wish to serve the way it is required today? And whom can we hold responsible in half a year or a year, when we will have to correct errors in a hurry that are permitted today on dutiful people, who used to work ahead of deadlines in carrying out any order? Those responsible forget that behind their reports are the fates of people, the fate of preparedness.

95-Percent Reduction in Soviet Nuclear Forces Proposed

18120122z Moscow INTERNATIONAL AFFAIRS in English No 8, Aug 89 pp 3-13

[Article by Radomir Bogdanov and Andrey Kortunov: "On the Balance of Power"]

[Text] Nuclear weapons entered the world scene slightly less than five decades ago. The philosophy of using them, which has taken the form of strategic nuclear thinking, is just as old. Its founders were American civilian specialists, who in the mid-forties began working for the famous Rand Corporation. As for the Soviet school of strategic nuclear thinking, it lags visibly behind the American school. For a long time, no open discussion was allowed in our country on questions relating to possible "exchanges of nuclear strikes", strategic stability or, say, the principles of building up strategic forces. The fact that our nuclear arms race was virtually a response to challenges from the United States and that we traditionally kept our military strategy secret played a negative role in its turn.

However, recent years have seen the situation change. There is more information now about our strategic programmes, and debates on prospects for the development of the Soviet strategic doctrine and for a military reform have found their way into the press. Already we have a whole school of Soviet nuclear strategists who can discuss the problem with their Western colleagues on an equal footing. Some express the hope that it will not be long before we and the Americans work out a common concept of strategic stability equally acceptable to both sides and reliably safeguarding world security.

These trends may apparently be regarded with some reservations as expressive of new thinking. It is certainly necessary and very important to overcome bias towards Western military strategic thought, seek compromise, renounce the traditional notion of the allegedly inherent "aggressiveness" of the West and master the achievements of US and West European military science. But there is no denying that in thrusting deep into the Americas' "strategic culture", we may drift to mechanically duplicating some of their strategic concepts and doctrines with all their shortcomings and negative implications. On one occasion in the history of Soviet foreign policy, we tried to deal with the United States according to its rules of the game. We mean the Soviet-US talks in the seventies on limiting strategic offensive weapons. The outcome? The nuclear arms race, far from being stopped, went on in the costliest and most dangerous directions.

Could the emerging limited "convergence" of the Soviet and US strategic schools lead to our country renouncing its independence in evolving nuclear strategy? Would we not tie ourselves to the United States and doom nuclear disarmament to a snail's pace? And then, how would the world react to such a Soviet-American nuclear condominium, to the setting up of a sort of world general staff,

with the two leading powers deciding on what benefited or did not benefit international military strategic stability?

We consider these questions highly important and relevant. They concern a fundamental choice of development lines for the armed forces for several decades ahead. It has to be a choice between "equalising" Soviet and US strategic forces (and hence putting strategic doctrines on an equal level in the name of a common concept of stability), or giving an asymmetric answer—both material and conceptual—firmly rejecting the American rules of the game. In the former case we would have a predictably long process of limiting nuclear armaments through Soviet-US talks and in the latter, unilateral measures of a revolutionary nature by the Soviet Union.

If the choice of our country is to be historically sound, we believe we must stop to think once again about the real role nuclear weapons have been playing and can play in our foreign policy and about how independent of the United States our military political decision-making actually is.

It has long become a banality to stress the exceptional role of the nuclear weapon in altering the relationship between war and politics. An essentially "absolute" weapon that may be said to have summed up trends in the millenniums-long evolution of means of warfare, it has confirmed a forecast first made at least as far back as Clausewitz's days. The forecast said that some day war was bound to stop obeying politics and serving as a guarantee of national security and to become a means of committing collective suicide.

All this has been mentioned many times in scientific works and in statesmen's speeches. But it is probably a major paradox of our times that the decades-old nuclear era has had relatively little effect on statesmen's traditional notions of national security and ways of safeguarding it and brought about no revolutionary changes in the foreign and military policy strategy of countries possessing nuclear arms. True, mankind has managed to escape a new world war but many a time mankind was close to it and, consequently, to destruction. Nuclear technology and political relations have been developing on two different planes as it were, without interacting. Where such interaction did take place it was very superficial and produced no essential or lasting changes in international relations, as it "logically" should have.

Indeed, for a very long period of history, international security was based on a "balance of power", of the military potentials of opposing states or coalitions. Every time the potential of one side grew, the only thing the other side could do to reinforce its security was to build up its own potential so as to restore the military balance. The principle of "balance of power" implied a most careful analysis of the quantitative proportions of the potentials of the two sides, for the problems of personnel and the quantity of armaments could prove decisive

(although account had also to be taken of combat experience, the standard of troop training, the morale of the population and other qualitative parameters).

The appearance and deployment of nuclear arms necessarily led to the adoption of a new concept on international security based on "containment" ("deterrence"). From then on, there was no particular need in seeking reliable security through matching the strength of the potential enemy—in view of the tremendous destructive power of nuclear weapons. All that was needed was to make it clear to him that should he start an armed conflict, he would inevitably lose much more than he could gain. After a certain capability for mutual annihilation has been achieved, quantitative analysis of the balance of power becomes pointless.

All the main principles of military strategy, too, must change in the nuclear age. Whereas the system of international relations based on a "balance of power" provided for the possibility of periodical "trials of strength" to adjust the balance, deterrence cannot be based on the permissibility of testing it in practice. Whereas parties involved in the "balance of power" system had to be in a position to carry on warfare for months or even years, the appearance of nuclear weapons made acquiring a capability for "response" the chief task. And whereas alliances, coalitions and satellite countries were vastly important in the prenuclear world, their role from the point of view of dependable nuclear deterrence is negligible.

The transition to a nuclear world took long, as postwar history has shown. The leading military powers of today—the Soviet Union and United States—still largely base their strategy on traditional postulates, giving priority to quantitative indicators of the alignment of forces, the preservation of strategic alliances and the achievement of a capability for protracted combat operations. This lagging behind the developments which are dictated by logic and common sense not only entails huge material expenditures but causes immense damage to international security by heightening the threat of world war. Only of late have there been signs of abandoning traditional notions of military power based on quantitative indices. The principle of "reasonable sufficiency" as the pivot of contemporary strategic thinking is bringing qualitative parameters to the fore. But their sphere of application is not quite clear yet. Specifically, it is unclear whether they cover strategic nuclear weapons.

Why is it, then, that development and deployment of nuclear weapons did not lead to the substitution of a strategy of "nuclear deterrence" for the "balance of power" strategy and then to a reasonable and mutually acceptable modification of the former? Why did the arms race, including its quantitative aspect, continue? Why didn't alliances, buffer states and other traditional means of guaranteeing security become a thing of the past? Why is it so hard to bring about even a small reduction in the absurdly colossal nuclear arsenals of the Soviet Union and United States?

The most obvious explanation would be that the special nature of nuclear weapons, their fundamental distinction from other weapons, did not dawn upon Soviet statesmen and military leaders immediately—far from it. Both during the Potsdam Conference and after the US bomb raids on Hiroshima and Nagasaki, Stalin made certain statements minimising the significance of the new weapon and trying to prove that it would not decide the outcome of war. And while he was seriously concerned about the Soviet nuclear lag, there is reason to believe that neither he nor his immediate entourage ever appreciated the revolutionising role of nuclear power.

The materials published in the late forties and early fifties and statements by political and military leaders suggest that Soviet military thought turned out to be unable at the time to respond adequately to the revolution under way in means of warfare. It still proceeded from the concept of classical war. As a result, the Soviet military doctrine failed to advance beyond the experience of World War II, which, moreover, was analysed very cautiously. No reasonably serious attempt was made to ascertain the causes of the military setbacks of 1941 and 1942, let alone fully reproduce the panorama of the war. Nor was the oppressive atmosphere of Stalin's last years conducive to working out new approaches.

As regards the United States, it was painfully slow in realising the nature of the new weapon. True, US military science was well ahead of its Soviet counterpart but this had no real effect on that country's political or military practice.

It is only fair to say that in the late forties and early fifties, when the Soviet and American nuclear arsenals were only just coming into existence while means of delivering nuclear weapons were most imperfect and unreliable, it was hard to see a situation fraught with "guaranteed mutual annihilation". Nor is it possible to establish the exact moment when the two powers found themselves in that situation. (Current research into the likely climatic, geological and medical effects of nuclear war is pushing that moment farther and farther back.) But it is apparently safe to say that during the Caribbean crisis (October 1962), a situation threatening "guaranteed mutual annihilation" not only existed but was recognised as such by the leaders of both powers.

Nevertheless, neither the Soviet Union nor the United States stopped at the levels which their nuclear potentials had reached by the time of the crisis—they continued building up and improving nuclear armaments. And what is more, Soviet and US military leaders went on claiming contrary to all logic that a nuclear war could be won and would result in defeating the enemy without destroying human civilisation.

The foregoing implies that the refusal of Soviet and American leaders to adopt new rules of the game prompted by the logic of the nuclear age cannot be attributed to their misinterpreting the nature of nuclear

weapons or underrating the latter's devastating power. The reason must have been different—we would say that the two countries' leaders expected to use nuclear weapons for ends having no direct relation to safeguarding international security. Both countries must have considered these ends important enough to justify both the back-breaking economic burden of the nuclear arms race and the mounting threat of nuclear war due to the growth of their respective nuclear potentials. As there can be no race with an only entrant, the United States would have had far less reason to build up its arsenal had the Soviet Union restricted itself at the time to maintaining its stockpile at a level guaranteeing "minimum deterrence".

We must note to begin with that the level of a "minimum deterrence" strategy was exceeded because both powers expected to use nuclear weapons as a means of safeguarding their security and, furthermore, of increasing their global political influence. This understandably necessitated greatly diversified and numerous scenarios of the "nuclear threat".

Much has been written in our country about how and in what circumstances the United States tried to use its nuclear weapons as an instrument of "extended deterrence", that is, of political blackmail against and pressure on other countries. The US military political doctrine still envisages such a contingency, especially in Europe. But we, too, made attempts to the same end. There was the note which Nikita Khrushchev sent to Britain in the autumn of 1956 threatening that country with a Soviet nuclear strike should it persist in aggression against Egypt.

Another reason why the United States and Soviet Union exceeded the level of "minimum deterrence" was, in our view, the political significance which the nuclear arms race itself had acquired. According to a concept current in international relations by then, the quantitative indicators of armed forces, particularly their strategic component, symbolised the nation's might. Both the Soviet Union and the United States supported this purely politico-psychological concept, not only because it set them apart from other countries, exalting them to a "superpower" status, but because both countries had their own reasons for following that irrational logic.

The Soviet Union, which still lagged considerably behind the United States in the economic sphere and had many unsolved social problems, found it tactically convenient to reduce all the diverse forms of competition between the two systems to chiefly military strategic ones. Military strategic parity, conceived as approximate quantitative equality, became something of a substitute for socialism's social and economic achievements in the competition with capitalism. There developed a certain parity worship, and what had been a means of guaranteeing security became an end in itself.

For the United States, the nuclear arms race acquired a useful economic function. But then it began to show its

own inertia, which was harder to overcome with every passing decade. The United States was very hopeful that the economic and technological burden of the race would break the Soviet Union's back sooner or later and that the country would fall apart, being "worn out economically". Besides, with US economic domination in the capitalist world showing a relative decline, the Americans came to regard nuclear power as a guarantee of their political leadership.

A third reason why the Soviet Union and United States went beyond "minimum deterrence" was, paradoxically enough, the mechanism of disarmament talks which existed until very recently. The main negative aspects of these talks are the Americans' effort to negotiate from a "position of strength" ensured by a continuous arms race and the principle of obligatory reciprocity underlying the talks. Taking advantage of this principle, the side having a stake in the arms race and continued tension can by simply blocking the talks make it impossible for the other side to cut its armaments unilaterally.

As a result, both sides find themselves unable to reduce their armaments even if this would meet their military or political interests. Such reduction might be mistaken for a concession or a sign of weakness. By the same token, the principle of reciprocity makes one side respond to an arms build-up undertaken by the other side even if defence interests do not call for it. Indeed, failure to respond in this way would be seen as an indication of "weakness". In other words, the negotiating mechanism in use until recently tied Soviet and US military construction together, as it were, preventing either of the sides from breaking the rules of the game by taking bold steps to reduce armaments.

The existing allied relations are the fourth reason why no "minimum deterrence" strategy has been adopted. One paradox of the nuclear era is that while the value of alliances is declining and for "junior" partners the involvement in them becomes extremely dangerous, the "fee" nuclear powers "pay" for their alliances becomes ever more dear.

In the prenuclear age, alliances were seen as a means by which a country could build up its national power, thereby strengthening its security. The emergence of nuclear weapons has changed the attitude to military alliances. As matters now stand, a country allied with one or several nuclear countries is less certain of its security and can do less than before to decide its own fate. And while alliances still ensure contacts between member countries and make it more difficult for an aggressor to implement his plans, they have lost their one-time importance. This is because nuclear weapons are a factor tying allies together and uniting them while at the same time accentuating their differentiation and tending to disunite them.

The fifth reason why the Soviet Union and United States exceeded "minimum deterrence" is, now as in the past,

the looseness of the definition of the level of "deterrence", or the proportions of the damage which makes it politically unacceptable for the potential enemy to start a war. For the Soviet Union, it means ascertaining what damage is unacceptable to the United States and what the latter could decide to sacrifice in order to try to defeat the Soviet Union. US strategists currently estimate that the destruction of over 20 million Americans, one third of the population of their country or even half of it would be unacceptable.

In regard to the United States, these estimates (even the most conservative of them) are enormously exaggerated, of course, with the possible aim of exerting psychological pressure on the Soviet Union, as if to say that the United States could afford to lose one third of its population and hence to risk a strike to disable the Soviet Union. Yet the United States found the loss of 50,000 men in its war of aggression in Vietnam unacceptable and had to get out.

Declassified documents testify that from the early fifties on, the US leadership, presuming (in accordance with the most pessimistic estimates) that Soviet bombers could carry several atom bombs all the way to the American territory, regarded a policy of triggering war as unacceptable.

It seems to us that today, when cold war structures are being dismantled and the incompatibility of a "balance of power" strategy with the realities of the nuclear age is more evident than ever, there are objective prerequisites for adopting a strategy of "minimum deterrence". Such a strategy presupposes a drastic unilateral cut in the Soviet nuclear arsenal and the preservation of a small number of warheads which could not be destroyed by a first-strike from the potential enemy and would inflict "unacceptable damage" upon him as a result of retaliation.

To provide "minimum deterrence", it is indeed enough to retain 500 nuclear warheads differing in yield and mounted on SS 25 mobile single-warhead land-based missiles and Delta 4 submarines, which carry a total of up to 64 warheads on 16 missiles. This is less than one-twentieth of the present number of nuclear warheads. The rest may, in our opinion, be scrapped without detriment to national security.

The elimination of 95 per cent of the Soviet Union's strategic nuclear capability would be a most serious step requiring careful consideration. The most diverse arguments could be advanced against going over to "minimum deterrence". The very fact that this would be a radical solution is likely to generate internal resistance, for the issue is national security. Any mistake in this matter could bring on irreparable disaster.

Let us look into the reasons usually given by those who object to "minimum deterrence" strategy and insist on keeping the existing nuclear arsenal of the Soviet Union.

Going over to "minimum deterrence" would sharply reduce the flexibility of Soviet military political strategy

and limit the range of likely responses to US actions, thereby tempting the potential enemy to try various acts of provocation. Let us imagine, for instance, that the United States were to deliver a "selective strike" against the Soviet Union and its allies, using low-yield nuclear weapons. Would we have to choose between refraining from retaliation and hitting Washington, New York and Los Angeles with megaton warheads? The former response would merely encourage the aggressor to go on while the latter would precipitate an all-out nuclear war. Hadn't we better preserve the existing "nuclear infrastructure", which makes it possible to respond to every strike from the aggressor with a commensurate strike?

These arguments would seem convincing except that to preserve and improve the existing "nuclear infrastructure" is to actually increase the war menace. We may be said to agree tacitly that a nuclear war could be limited to a controlled exchange of counterforce strikes. The development of new and high precision ICBMs and MIRVs gives the other side additional cause to seek greater flexibility, accuracy and invulnerability for its weapons systems and for a more rational strategy geared to waging war.

But a "minimum deterrence" potential (500 warheads differing in yield) would be such as to make it possible to use more than one retaliation scenario. In the event of a "selective strike" against the Soviet Union or its allies by means of several warheads (that is, a strike by way of blackmail rather than as an attempt to disarm the Soviet Union or inflict a decisive defeat upon it), the greater part of the "minimum deterrence" capability would be left intact. Thus the range of retaliation scenarios would be wide enough as to both targets and yields. The important thing is that retaliation would in all circumstances take the form of a countervalue strike and not a counterforce one, that is, would be aimed at civilian targets.

"Minimum deterrence" might guarantee security but only for the time being. Sustained effort by the United States in the area of ABM systems and anti-submarine weapons, increasingly accurate delivery vehicles and ever more effective civil defence would sooner or later endanger the means of "minimum deterrence" left to us and make it possible to limit damage from the few Soviet nuclear weapons systems that would have survived a US nuclear first-strike.

The scenario may be visualised as follows. Highly accurate American first-strike weapons plus the latest anti-submarine systems would knock out nine-tenths (let us proceed from the maximum) of the Soviet "minimum deterrence" potential. The Soviet Union would thus be left with only 50 of its 500 warheads. It would retaliate by using these 50 warheads. Another nine tenths of these would be neutralised by a highly efficient ABM system with space-based components. Only five warheads would hit home, and civil defence measures would make it

possible to substantially reduce casualties among civilians. As a result, the Soviet Union would find itself disarmed and compelled to surrender.

We think this line of reasoning is untenable, too. First of all, it is based on the abstract supposition that the United States would be able to destroy or intercept 99 per cent of the nuclear warheads of the Soviet "minimum deterrence" potential. No serious American expert on ABM and anti-submarine defence and strategic vehicle targeting systems would venture such a forecast. Even if the Soviet side were to do nothing at all to make its potential more "viable" and if the United States were to use all its material and intellectual resources to develop ABM and anti-submarine systems, so high a degree of neutralisation of Soviet "minimum deterrence" nuclear systems is unthinkable in the foreseeable future.

Second, what would the remaining one per cent which reached US territory after all be made up of? Five nuclear warheads with a yield of, say, one megaton each? That would be sufficient to wipe out Bost-Wash, or one of the two largest agglomerations of the United States (the belt of industrial centres on the East Coast extending from Boston to Washington), or San-San (the urbanised part of the West Coast from San Diego to San Francisco). This means tens of millions of inhabitants who would die in the early hours after the attack, an economic collapse of American society, a breakdown of the political system, ecological damage that would make itself felt for many decades. Is there an aim that would justify such damage? Are there any foreign policy considerations outweighing this amount of loss? We believe the answer is no.

"Medium deterrence" strategy is based on the concept of the US political and military leadership's rationality. But that leadership might act irrationally, ideological stereotypes might prove stronger than the opinion of experts, and illusions might outweigh sober calculation, with group interests winning the upper hand over national interests. The United States might risk a nuclear conflict even if the risk were objectively too great. Remember the early years of the Reagan administration, when top political leaders of the country affirmed that a nuclear war could be won, that it could be limited, and so forth. Couldn't this happen again?

Of course, if the race for the White House were won by a nuclear maniac, an adventurer like Hitler, "minimum deterrence" would not be effective enough as a strategy. But then there is no defence at all against an irrational nuclear strategy. Nor would a "balance of power" strategy be effective.

But is it wise to allow for such doubtful contingencies? After all, even Ronald Reagan, possibly the most conservative and anti-Soviet US president of the post-war period, a man who made very dangerous statements, especially in 1981 and 1982, showed great restraint and

prudence in pursuing his policy. His administration never did anything that could have led to a US-Soviet clash.

Besides, the political situation in the United States and the level of anti-Sovietism in social consciousness and the thinking of the political leadership are largely conditioned by the international activity and military construction of the Soviet Union. Our very first real steps towards applying the principles of "reasonable sufficiency" in military construction and implementing the ideas of new political thinking in our foreign policy led to a marked drop in anti-Sovietism in the United States and discouraged support for a further increase in military spending. Now imagine the powerful effect that a unilateral transition to a "minimum deterrence" strategy by the Soviet Union would have. There is not the slightest likelihood that in such a situation power in the United States could be taken over by militarist ultras willing to risk suicide in the hope of crushing communism.

Incidentally, we should take account of the political impact of the Soviet Union adopting a "minimum deterrence" strategy when we stop to think of the possibility of the United States acquiring a capability for a "disarming strike" some time in the future. We do not think anybody would want to finance "Star War" programmes, the development of anti-submarine weapons, and so on, were the Soviet Union to opt for "minimum deterrence". SDI comes up even now against financial problems that are hard to solve. Every step towards "minimum deterrence" would be a blow to the positions of the US right.

By reducing our strategic potential to the proportions of "minimum deterrence", we would descend to a level comparable to that of the nuclear forces of China, France and Britain. Whereas these countries may be discounted in assessing the strategic nuclear balance (the Soviet Union and United States account for over nine tenths of the world nuclear potential), the potentials of third countries would become important in the event of the Soviet Union going over to "minimum deterrence". Thus the world strategic balance would become more complex and hence less stable. It would be not only the United States but other countries that we would have to reckon with as potential enemies, which means that it would be much more difficult to maintain the "credibility" of deterrence. Besides, a sharp cut in the Soviet strategic potential might encourage third nuclear countries to speed up their modernisation programmes since this would become more important from the practical point of view than it is now.

Of course, in terms of cold war logic, a bipolar structure is preferable to a multipolar one. But whether we like it or not, the bipolar structure is disintegrating. Seeing that the Soviet Union advocates pluralism in world politics and rejects the "superpower" status imposed upon it, there is no point in clinging to military bipolarity. As regards the "credibility" of deterrence, the strength

needed to reliably deter the United States would be more than enough to deter France or Britain. A further circumstance to be borne in mind is that the Soviet Union's unilateral renunciation of its status of nuclear "superpower" and a transition to "minimum deterrence" would undoubtedly lead to increased public pressure on the French and British governments aimed at making them wind down their nuclear modernisation programmes, especially if the transition were accompanied by corresponding moves in regard to conventional armaments.

"Minimum deterrence", like any countervalue strategy, is immoral because it holds the civilian population of the potential enemy hostage. For all the shortcomings of counterforce strategy, it provides for strikes against military targets, command centres and the political leadership. It leaves at least some hope that the war would not be disastrous to millions, that the more important cities would be spared and that the war could be kept within certain limits. The increasing accuracy of delivery vehicles and the diminishing yield of nuclear warheads hold out hope that future operations could be restricted to "surgical" strikes and so would not result in destroying the whole of civilisation. The adoption of a "minimum deterrence" strategy would mean returning to the period of "nuclear barbarity" and desisting from attempts to make nuclear weapons more "civilised".

It seems to us that the two concepts are being mixed up on this point. If in speaking of the strategy of **preventing** nuclear war, we proceed from the assumption that such a war is perfectly possible and that we must therefore work out optimum scenarios for the conduct of military operations, a counterforce strategy really seems more humane than a countervalue one. However, even a superficial analysis suggests that as far as casualties among civilians are concerned, the difference would not be so very great. But if we consider that there must be no nuclear war at all and that the chief task is to prevent it, then it would be the height of immorality to try in any way to "civilise" nuclear arms, to prove that damage could be "limited", and so on. "Minimum deterrence" raises the "nuclear threshold" and makes the dividing line between war and peace perfectly clear, while a counterforce strategy virtually lowers the "nuclear threshold", giving rise to illusions about the permissibility of war.

Going over to "minimum deterrence" could provide new and greater opportunities for a global proliferation of nuclear weapons. The Soviet and US nuclear arsenals are so enormous as to make attempts by further countries to join the "nuclear club" meaningless. Indeed, the political effect of coming into possession of nuclear arms (several units) of one's own is rather negligible against the background of the two "superpowers" 50,000 nuclear warheads whereas the negative implications would be considerable (the likely hostility and mistrust of neighbours, a negative response from world opinion, a likely reduction in foreign aid, and so on). But if the Soviet Union were to cut its strategic potential to one

twentieth, other countries may view differently the balance between the gains due to possessing nuclear weapons and its costs.

The comment this invites is, first of all, that the Treaty on the Non-Proliferation of Nuclear Weapons binds the nuclear powers to seek a maximum reduction in their arsenals. Many countries which have the technology needed for the production of nuclear weapons and refuse to sign the treaty argue that the nuclear powers are still doing less than enough to meet their commitments. The adoption of a "minimum deterrence" strategy by the Soviet Union would demonstrate a responsible approach by one of the two leading nuclear powers and help strengthen the regime of non-proliferation.

The threat of proliferation would still be there, of course. It could only be removed through steadfast efforts by the world community. However, it is unlikely that this threat would grow sharply in the event of a reduction in the Soviet nuclear potential. After all, what is involved is not only the number of nuclear warheads (although 500 warheads amount to a quantitative level which no "threshold" country is equal to attaining in the foreseeable future) but the quality of delivery vehicles. In terms of qualitative indicators, the price of joining the "nuclear club" is going to remain very high.

A "minimum deterrence" strategy would make it impossible for the Soviet Union to defend its allies against an attack launched by means of nuclear or conventional arms, nor could we in such a contingency defend interests going beyond the prevention of nuclear war.

Now let us see what alliances and what interests are involved. In the context of confrontation between the WTO and NATO, any large-scale conflict between them would grow rapidly and almost inevitably into a global nuclear war. We have repeatedly declared that it would be impossible to limit a nuclear war to Europe. It follows that there is no need to preserve the material means of fighting such a war, including tactical nuclear weapons. In today's situation on our continent, East European countries have no need for Soviet "nuclear guarantees" since their security is inseparable from that of the Soviet Union.

In the matter of supporting Soviet interests in the developing world with nuclear weapons, an "extended deterrence" strategy based on nuclear weapons is an extremely hazardous business. There is no deterring the United States from undesirable activity without the concomitant and unacceptable danger of conflict and a loss utterly incommensurate with the importance of the interests being defended.

As for putting pressure on various forces in the Third World having no direct ties to potential nuclear adversaries of the Soviet Union, such attempts are mostly doomed to failure, as we know from history. Nuclear weapons were of little help to the Americans in Vietnam, the British in their conflict with Argentina and ourselves in Afghanistan.

The adoption of a "minimum deterrence" strategy and drastic unilateral cuts in Soviet nuclear forces would greatly complicate further Soviet-US talks on nuclear armaments. For us, it would mean renouncing the rules of the game formed over a long period. Reductions in Soviet nuclear forces would not be accompanied by the setting up of adequate verification mechanisms, and asymmetry between the Soviet and American potentials would grow. Unilateral moves by the Soviet Union would cause perplexity and nervousness in Washington even among those who stand in principle for arms cuts. The implication would be that we were refusing to use the opportunities offered us by talks.

All of it is true, of course. But let us stop and think which is more important to us: to continue talks or to achieve security at minimum cost to our economy. Talks should not be an end in itself. If the other side is unprepared for decisive breakthroughs at the talks (the Americans are not yet prepared to accept "minimum deterrence" and will hardly be prepared for it soon), unilateral moves appear to be completely justified. All important steps towards disarmament in the postwar period, with the possible exception of the IRM-SRM Treaty, were a result of unilateral decisions by the Soviet Union, the United States, China and other countries. Surely we are not doomed to be tied to the US war machine for all time and to be dependent on the political situation that happens to shape up on the Potomac.

"Minimum deterrence" would necessitate a shift of the emphasis in our military construction to conventional armaments and general-purpose armed forces. To make up for the reduction in nuclear forces, we would have to effect a corresponding increase in the capabilities of other components of our military power. Going over to "minimum deterrence" would be disadvantages above all economically, for instead of saving resources, we would have to shoulder additional expenditures.

This kind of logic might be acceptable if it were a question of preserving the traditional functions of the armed forces while altering the proportions of their various components. Yet the point at issue is a revision of the functions themselves, of renouncing "surpluses" of both nuclear and conventional armaments, which could be reduced simultaneously. China once set an instructive example by simultaneously freezing its nuclear programme and cutting its general-purpose armed forces by nearly one million men. This did not tell on its security. The principle of reasonable sufficiency applies in equal measure to all types of armed forces. Going over to "minimum deterrence" in the nuclear sphere should hasten the optimisation of our military construction as a whole.

A transition to "minimum deterrence" and a reduction of our nuclear forces to 500 warheads would be seen both at home and abroad as a sign of weakness, of our inability to bear up under the arms race imposed upon us. American hawks would attribute it to Washington's "position of strength" policy. And even if the reduction

process itself proved to be relatively painless, it would still lead to a substantial decline in Soviet influence in the world and reduce our role in international affairs. Whereas the Soviet Union today is one of the two leading world "power centres", going over to "minimum deterrence" would make it just one of the great powers burdened, moreover, with many big internal problems.

How justified are these fears? If we are to go by the reaction of American hawks, we had better do nothing in this respect, for no matter what we did, they would interpret it in the most negative way, would represent it as a cunning tactic designed to lull the West or as a result of US pressure. As for the likely reaction of public opinion—both at home and abroad—we have gained experience we can draw on. We mean the reduction in Soviet armed forces by 500,000 men announced in December 1988. Numerous world opinion polls have shown that our unilateral measures are appreciated and meet universal support.

As to our status in world politics it is objectively bound to decline irrespective of whether or not we preserve a surplus of nuclear arms. This is because we fall short of a highly developed country on very many counts, including economic structure, living standards, life expectancy and the environment. Our weakness will come out more and more as the cold war system disintegrates and international relations are demilitarised, with new, non-military components of national power coming to the fore. Of course, we could delay this inevitable process, but hadn't we better give up obsolete symbols of international status and concentrate on catching up with countries which have surpassed us in recent decades?

"Minimum deterrence", like any deterrence, is contrary to the idea of a nuclear-free world. It means perpetuating nuclear weapons and condemning humanity to a permanent threat of universal destruction.

We suppose nobody would deny that from the point of view of international security, it would be better to scrap all nuclear weapons as soon as possible. But we cannot expect such a thing just yet. Our likely partners, at least now, are taking their time over subscribing to the programme for the abolition of nuclear arsenals by the year 2000 which our country has put forward. There is apparently a need for intermediate stages in the advance to a nuclear-free world, stages at which all parties to international relations could feel secure. "Minimum deterrence" could be such an intermediate stage for our country and, indeed, for the world community as a whole.

Thus the arguments against a "minimum deterrence" strategy turn out not to be very convincing when examined closely enough. Generally speaking, the idea of "minimum deterrence" and a twenty-fold reduction in Soviet strategic nuclear forces seems radical and almost Utopian only to those who stick to traditional political thinking and ideas of "balance of power". One has only

to discard this approach, and all arguments in favour of a "balance", "parity" or an approximate quantitative and qualitative equality of Soviet and US strategic forces would fall apart like a house of cards.

What could progress towards "minimum deterrence" begin with? We see the best start in a unilateral 50 per cent reduction of strategic armaments, which we are negotiating with the United States. It is obvious even now that the Bush administration is going to stall, making further demands and revising agreements. Why should we again keep to the Americans' rules of the game? Hadn't we better give up this game, all the more so since certain provisions of the treaty on nuclear armaments now in sight would compel us to invest more in strategic area instead of spending less?

A unilateral 50 per cent cut in strategic armaments would represent something more than a big step towards optimising our military construction. It would have its effect on the United States by making it realise that there is no going back to the past, and would end all that is left of the cold war. The measure necessitates no extra talks or consultations—the political boldness repeatedly shown by the Soviet leadership in international affairs is sufficient for it to be carried out.

COPYRIGHT: MID SSSR, Obshchestvo "Znaniye".
Mezhdunarodnaya zhizn" 1989

English Translation COPYRIGHT: Progress Publishers
1989

Ministry Of Defense Expresses Concern Over NATO Exercises

*18010892 Moscow KRASNAYA ZVEZDA in Russian
13 Sep 89 First Edition p 3*

[Unattributed article: "In The USSR Ministry of Defense"]

[Text] The USSR Ministry of Defense notes with particular concern that since early September, the NATO top brass have turned the territory of the European NATO countries into a military training ground. All the way from northern Norway to the eastern borders of Turkey, and from Gibraltar to the Elbe, as well as in the adjacent waters of the Atlantic, nearly 30 major combined-arms, air force and naval exercises have begun virtually simultaneously.

They are being held under common direction and under a common scenario within the framework of the bloc's latest annual maneuvers, known as Autumn Forge'89. According to official sources, taking part in the maneuvers are more than 200,000 servicemen, 1,000 tanks, up to 2,000 warplanes, and nearly 400 ships of all the bloc's countries, including France and Spain, which do not belong to NATO's military organization.

This year, special attention is being devoted to rehearsing naval operations in the Atlantic. In exercises known as Sharp Spear, strike forces and antisubmarine forces of the fleets of the United States, Great Britain, Canada, the

FRG, Norway, Denmark, the Netherlands, and Spain, with a combined strength of almost 200 ships and 500 warplanes and helicopters, have now begun deploying in operational zones of the Atlantic theater of war. NATO admirals make no bones about their plan—to train their navies in accordance with the concept of "forward-based naval forces," which calls for a constant NATO naval presence in immediate proximity to the territorial waters of the Warsaw Treaty countries and a readiness to launch immediate strikes against their ships and on-shore installations.

The USSR Armed Forces General Staff takes the view that such a high level of activity on the part of the armed forces of the North Atlantic alliance member states is at variance with statements made by the NATO military and political leadership regarding the alliance's commitment to the cause of strengthening peace and universal security and regarding the defensive character of its military doctrine.

In terms of the scope and character of the tasks to be accomplished, the Autumn Forge maneuvers are hard to distinguish from the deployment of offensive groupings near the socialist countries' state borders for actual combat operations. This activity is clearly at odds with the positive changes that have occurred in relations between NATO and the Warsaw Treaty Organization in the past few years, and it fails to strengthen confidence between their countries and peoples.

10
22161

85

NTIS

ATTN: PROCESS 103

5285 PORT ROYAL RD

SPRINGFIELD, VA

22161

This is a U.S. Government publication. Its contents in no way represent the policies, views, or attitudes of the U.S. Government. Users of this publication may cite FBIS or JPRS provided they do so in a manner clearly identifying them as the secondary source.

Foreign Broadcast Information Service (FBIS) and Joint Publications Research Service (JPRS) publications contain political, economic, military, and sociological news, commentary, and other information, as well as scientific and technical data and reports. All information has been obtained from foreign radio and television broadcasts, news agency transmissions, newspapers, books, and periodicals. Items generally are processed from the first or best available source; it should not be inferred that they have been disseminated only in the medium, in the language, or to the area indicated. Items from foreign language sources are translated; those from English-language sources are transcribed, with personal and place names rendered in accordance with FBIS transliteration style.

Headlines, editorial reports, and material enclosed in brackets [] are supplied by FBIS/JPRS. Processing indicators such as [Text] or [Excerpts] in the first line of each item indicate how the information was processed from the original. Unfamiliar names rendered phonetically are enclosed in parentheses. Words or names preceded by a question mark and enclosed in parentheses were not clear from the original source but have been supplied as appropriate to the context. Other unattributed parenthetical notes within the body of an item originate with the source. Times within items are as given by the source. Passages in boldface or italics are as published.

SUBSCRIPTION/PROCUREMENT INFORMATION

The FBIS DAILY REPORT contains current news and information and is published Monday through Friday in eight volumes: China, East Europe, Soviet Union, East Asia, Near East & South Asia, Sub-Saharan Africa, Latin America, and West Europe. Supplements to the DAILY REPORTs may also be available periodically and will be distributed to regular DAILY REPORT subscribers. JPRS publications, which include approximately 50 regional, worldwide, and topical reports, generally contain less time-sensitive information and are published periodically.

Current DAILY REPORTs and JPRS publications are listed in *Government Reports Announcements* issued semimonthly by the National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, Virginia 22161 and the *Monthly Catalog of U.S. Government Publications* issued by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

The public may subscribe to either hardcover or microfiche versions of the DAILY REPORTs and JPRS publications through NTIS at the above address or by calling (703) 487-4630. Subscription rates will be

provided by NTIS upon request. Subscriptions are available outside the United States from NTIS or appointed foreign dealers. New subscribers should expect a 30-day delay in receipt of the first issue.

U.S. Government offices may obtain subscriptions to the DAILY REPORTs or JPRS publications (hardcover or microfiche) at no charge through their sponsoring organizations. For additional information or assistance, call FBIS, (202) 338-6735, or write to P.O. Box 2604, Washington, D.C. 20013. Department of Defense consumers are required to submit requests through appropriate command validation channels to DIA, RTS-2C, Washington, D.C. 20301. (Telephone: (202) 373-3771, Autovon: 243-3771.)

Back issues or single copies of the DAILY REPORTs and JPRS publications are not available. Both the DAILY REPORTs and the JPRS publications are on file for public reference at the Library of Congress and at many Federal Depository Libraries. Reference copies may also be seen at many public and university libraries throughout the United States.